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INTRODUCTION

With the place of the Chamic languages solidly fixed within the Austronesian family of languages as evidenced by the work of Pittman (1959), Dorothy Thomas (1963), Doris Blood (1962), Dyen (1965,1971), and Lee (1974), this present volume is a major step in making the Chamic languages known. In addition to the articles cited above, a few other articles on the Chamic languages have been published (see bibliography), but this volume is dedicated entirely to the Chamic languages with articles ranging widely from phonological descriptions to sentence level grammatical descriptions to comparative studies to lexical evidence of social structure.

The Chamic languages constitute a small homogeneous group within the West Indonesian Cluster of the Austronesian languages (Dyen 1965:26,7) and provide both independent verification for comparative studies done in Austronesian and as with other branches of the family provide an opportunity for refining those studies.

The Chamic languages also provide an excellent example for the study of languages in contact since they are contiguous with several widely divergent branches of Mon-Khmer. It is hoped that this volume will provide data for further studies along this line beyond that of Lee (1974).

A brief statement on internal classification of the languages is included here. Recent comparisons which I have made based largely on the Swadesh 200 word list show a range of percentages from 59 to 82 percent. All of the word lists were nearly complete, but some variation occurs because of differences in understanding of the Vietnamese words used in elicitation and because of the lack of generic terms in some cases. This undoubtedly caused some skewing, but I do not believe that it is great enough to affect the general relationships essentially. The languages and/or dialects compared were Western Cham (Cambodian and Vietnam Delta), Eastern Cham (Coastal Vietnam), Chru, Southern Roglai,

Northern Roglai, Haroi, Jorai, and Rade. One factor which may make some difference, however, is that the Rade word list came from the eastern edge of the Rade area rather than from the centre. I would expect this to show a closer relationship to the coastal languages and dialects rather than a more distant one. The lowest figures still run between Rade and the coastal languages.

The lexicostatistical studies would indicate a clear grouping of the Southern Chamic languages, but the Northern languages do not show the same type of relationship. Southern Chamic includes Cham, Roglai, and Chru with percentages varying from 71 to 82 percent within the group. The Northern languages show cognateness varying from 66 to 73 percent. Haroi shows a closer relationship with three of the Southern Chamic languages (Eastern Cham 67%, Chru 69%, N. Roglai 67%) than with Rade, but Jorai stands halfway between Haroi (73%) and Rade (72%) so that it appears that we have no clear demarcation between a Northern and a Southern group, but only that Southern Chamic seems to make a subgroup. The range of cognateness between the Southern languages and the Northern ones is 59 to 69 if Haroi is included with the Northern ones, but 59 to 64 if only Rade and Jorai are considered. These last figures differ considerably from that of Gregerson, Smith, and Thomas (1976:378); they found 70-73 percent cognateness between Plateau and Coastal Chamic.

The distribution of the languages may indicate that the original area of the Chamic movement into Vietnam was fairly far north, that is in Central Vietnam. It would appear that the Rades and Jorais moved into the interior with the Jorais providing a buffer between the Haroi and Rade. The Haroi in turn may have provided a buffer between Cham and Jorai. The Chrus and Roglais would represent a later migration to the South with the Cham pushing them as the kingdom expanded or as the Vietnamese pushed the Chams southward. A possible etymology of the word Roglai is *urang* 'people' plus *glai* 'forest' so that the Roglais may only have been backwoods Chams during part of the Chamic empire. History would indicate that the Chams at one time also extended much further north in Central Vietnam probably even into what is now North Vietnam. Evidence of intercourse with the Chams is also very clear in the Mon-Khmer languages which are nearer to the coast of Central Vietnam.

CHART OF COGNATENESS

W. Cham

82	<i>E. Cham</i>					
75	76	<i>Chru</i>				
77	77	77	<i>S. Roglai</i>			
71	71	72	71	<i>N. Roglai</i>		
64	67	69	65	67	<i>Haroi</i>	
62	62	64	60	64	73	<i>Jorai</i>
61	61	63	59	61	66	72 <i>Rade</i>

CHART OF COGNATENESS

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HAROI PHONEMES¹

ALICE TEGENFELDT MUNDHENK AND HELLA GOSCHNICK

- 0. Introduction
- 1. Vowel Phonemes
 - 1.1. Vowel Descriptions
 - 1.2. Vowel Contrasts
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- 3. Phoneme Distribution
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 - 3.3. Vowel and Consonant Combinations
- 4. Summary of Word Pattern
- 5. Stress

0. INTRODUCTION

Haroi is a language of the Chamic branch of the Malayo-Polynesian family spoken by 10-15,000 Montagnards in Phú Yên, Bình Định, and Phú Bôn provinces of South Viet Nam. It is more closely related to the central Chamic languages, Rade and Jarai, than to the coastal Chamic languages Cham, Roglai, and Chru.

Chamic languages generally have a rather simple vowel system of nine or ten vowels. The complex 32 vowel system of Haroi, however, is more similar to the Mon-Khmer languages. Possibly the nearness of the

Haroi to the Bahnar and other Mon-Khmer groups would explain this. Some in fact have referred to the Haroi as Bahnar Cham², but a study of the sound system and vocabulary clearly shows that Haroi certainly belongs to the Chamic language family, but that it has more Bahnaric loanwords than either Rade or Jarai have, which gives some justification to the name.

This paper is based on the speech of the Haroi from Sơn Hòa district in southern Phú Yên province.

1. VOWEL PHONEMES

As shown in Figure 1, Haroi has 11 simple vowels, each of which can be short (unmarked) and long (marked `), giving 22 simple vowels plus 10 glided vowels plus 10 nasalised vowels which gives a total of 42 vowel phonemes. The nasalised vowels, however, are very rare, with only two examples of each nasal vowel, except that preceding final p, t, and k, all vowels are nasalised. Figure 1 shows that in both the simple vowels and glided vowels nasalisation appears on all the vowels except the front and high vowels. Because there are so few nasalised vowels, in this analysis they will be treated as peripheral to the basic pattern of 32 vowels.

	FRONT				CENTRAL				BACK			
	S.		Gl.		S.		Gl.		S.		Gl.	
	sh.	l.	sh.	l.	sh.	l.	sh.	l.	sh.	l.	sh.	l.
ORAL												
HIGH CL	i	ì	ia	ìa	ɨ	ɨ̃	ɨa	ɨ̃a	u	ù	ua	ùa
HIGH OP	ɪ	ɪ̃							ʊ	ʊ̃		
MID	é	é̃	éa	é̃a	ə	ə̃			ô	ỗ	ôa	ỗa
LOW	e	ẽ			a	ã			o	õ		
NASAL												
HIGH CL								ɨ̃a				ù̃a
HIGH OP												
MID			ẽa	ẽ̃a	ə̃						õa	õ̃a
LOW	ẽ					ã			õ			

Figure 1.

The full set of 11 simple vowels is found for the short vowels before final h and ʔ, and for the long vowels before ng and in open syllables. All five short glided vowels occur before final ʔ, the five long glided vowels before ng.

1.1. VOWEL DESCRIPTIONS

For an analysis of which vowels appear with which final consonants, see Figure 5.

/i, ð, ia, ða/	<p>/i/ is a high front close unrounded vowel [i].</p> <p>/ð/ is phonetically similar to /i/ but longer.</p> <p>/ia, ða/ are /i, ð/ respectively glided to a neutral central vowel.</p>
/ɪ, ð/	<p>/ɪ/ is a high front open unrounded vowel [ɪ], whereas the long /ð/ has a slight off-glide [ɪ^e].</p>
/ê, ê, /	<p>/ê/ is a mid front unrounded vowel [e]. /ê/ is phonetically similar to /ê/ but longer. /êa, êa/ are /ê, ê/ respectively glided to a neutral vowel.</p>
/e, è/	<p>/e/ is a low front unrounded vowel [ɛ]. /è/ is phonetically similar to /e/ but longer.</p>
/ɨ, ɨ, ɨa, ɨa/	<p>/ɨ/ is a high close central unrounded vowel [ɨ].</p> <p>/ɨ/ is phonetically similar to /ɨ/ but longer.</p> <p>/ɨa, ɨa/ are /ɨ, ɨ/ respectively glided to a neutral central vowel.</p>
/ə, è/	<p>/ə/ is a mid central unrounded vowel [ə]. /è/ is phonetically similar to /ə/ but longer.</p>
/a, à/	<p>/a/ is a low central unrounded vowel [a]. /à/ is phonetically similar to /a/ but longer.</p>
/u, ù, ua, ùa/	<p>/u/ is a high close back rounded vowel [u].</p> <p>/ù/ is phonetically similar to /u/ but longer.</p> <p>/ua, ùa/ are /u, ù/ respectively glided to a neutral central vowel.</p>
/u, ù/	<p>/u/ is a high open back rounded vowel with a slight onglide [u^u]. /ù/ is phonetically similar to /u/ but longer.</p>
/ô, ô, ôa, ôa/	<p>/ô/ is a mid back rounded vowel [o]. /ô/ is phonetically similar to /ô/ but longer.</p> <p>/ôa, ôa/ are /ô, ô/ respectively glided to a neutral central vowel.</p>
/o, ò/	<p>/o/ is a low back rounded vowel [ɔ]. /ò/ is phonetically similar to /o/ but longer.</p>

1.2. VOWEL CONTRASTS

ORAL					
Simple			Glided		
Front					
ami? 'mother'	lamì? 'recently'	lamia? 'put away'	ñlap	'barren'	
si? 'near'	sì? 'to hoe'				
lê? 'and yet'	čĕk 'pineapple'	kĕa? 'to shepherd'	tĕal	'stool'	
le? 'fall'	ʔè? 'to spit out'				
Central					
sɨ? (-laph+k) 'disorderly'	sɨ? 'kind of snake'	sɨa? 'to stuff'	sɨa?	'to invite'	
bə? 'to stretch'	laʔə? 'cold'				
pa? 'to braid'	pà? 'four'				
Back					
bu? 'to heap'	bù? 'hair'	hanua? 'right (side)'	čanua?	'household'	
khu? 'pot'	čakhù? 'to get up'				
sô? 'whisper'	yô? 'down'	sôa? 'to scoff at'	kôah	'to scratch'	
ako? 'head'	kò? 'white'				
NASAL					
Front					
		ĕa? 'to urinate'	sĕa	'squirrel'	
hĕ	'similar'				
Central					
			čarɬaw	'medicine'	
	ñĕs 'to hobble'				
	čarãʔw 'crossbow'				
Back					
			kathũa	'kind of fish'	
		masôah 'fox'	tôai	'guest'	
	haʔôy 'Haroi song'				

2. CONSONANT PHONEMES

see Figure 2 on next page

	<i>bilabial</i>	<i>dental</i>	<i>alveo- palatal</i>	<i>velar</i>	<i>glottal</i>
voiceless stops	p	t	č	k	ʔ
voiceless stops, asp.	ph	th		kh	
voiced stops	b	d			
nasals	m	n	ɲ	ŋ	
liquids			r/l		
fricatives			s		h
semivowels	w		y		
semivowels, preglottalised	ʔw		ʔy		

Figure 2.

2.1. INTERPRETATION

Aspirated stops are interpreted as single phonemes because they occur in clusters with *w* and *y* (for examples see Section 3.2.) where only non-suspect single consonants occur, and there are no other three-consonant clusters found in the language. It should be noted, however, that, like consonant clusters, the aspirates do not appear in word-final positions, but they do appear as neutralised allophones of the unaspirated stops in presyllable-initial position (see Section 2.2.).

Preglottalised ʔw, and ʔy are also interpreted as complex single phonemes because ʔy appears in a syllable-initial cluster with *r*, ʔyràŋg 'leopard', where only single consonants occur. ʔw is considered a single phoneme for reasons of symmetry.

Preaspirated hm, hn, hɲ, hŋg, hr, hl, hw, and hy, on the other hand, are interpreted as clusters of *h* plus *m*, *n*, *ɲ*, *ng*, *r*, *l*, *w*, or *y* because they do not appear in any consonant clusters nor in presyllable-initial or word-final positions, where only single consonants occur.

2.2. CONSONANT DESCRIPTIONS

- /p/ is a simple voiceless bilabial stop [p], with the allophone [p^h] in the presyllable if the main syllable begins with *r* plus a high close vowel. [p^hərùayʔ] 'enter (stomach)'.
- /t/ is a simple voiceless dental stop [t̪].
- /č/ is a simple voiceless alveopalatal stop [tʃ] with the allophone [tʃ^h] in presyllables before liquids. [tʃ^hɪlɪʔan] 'road'.
- /k/ is a simple voiceless velar stop [k], with the allophone [k^p] word final following *u* and *ô*, [əpô^kp] 'gobyfish', and the allophone [k^h] in the presyllable if the main syllable begins with *r*

- plus a high close vowel. [k^hr+?] '*vulture*'.
- /p^h/ is an aspirated voiceless bilabial stop [p^h].
- /t^h/ is an aspirated voiceless dental stop [t^h].
- /k^h/ is an aspirated voiceless velar stop [k^h].
- /ʔ/ is a glottal stop [ʔ].
- /b/ is a voiced bilabial preglottalised stop [b̥].
- /d/ is a voiced dental preglottalised stop [d̥].
- /m/ is a simple bilabial nasal [m].
- /n/ is a simple dental nasal [n].
- /ɲ/ is a simple alveopalatal nasal [ɲ].
- /ŋ/ is a simple velar nasal [ŋ] with the allophone [ŋ⁰m] word final following u and ô. [sù⁰m] '*axe*'.
- /r/ is a voiced alveolar flap [ɾ] which fluctuates freely with the trill [ʀ].
- /l/ is a voiced alveolar lateral [l].
- /s/ is a voiceless alveopalatal fricative [ʃ] alternating freely with the affricate [tʃ]. It has the allophone [yh] which appears word final.³
- /h/ is a voiceless glottal fricative [h]. In certain words there is a metatheses of the h. [həm+a], [əhm+a] '*field*', [həroi]. [əhroi] '*Haroi*'.
- /w/ is a voiced bilabial rounded vocoid [w]. In syllable-initial position it alternates freely with a slightly fricative allophone [v]. In word-final position it is a non-syllabic vocoid [u]. [asau] '*dog*'.
- /ʔw/ is a preglottalised bilabial rounded vocoid [ʔw] with the allophone [wʔ] which appears only word final. [ph+awʔ] '*full*'.
- /y/ is a voiced alveopalatal vocoid [y]. Word-medially between two vowels it has a fricative allophone [ʒ]. [pəʒam] '*to be honest*'. Word-final it has a lax non-syllabic allophone [i]. [əʒoi] '*body*'.
- /ʔy/ is a preglottalised voiced alveopalatal vocoid [ʔy]. It alternates freely with [ʔtʷ]. It has the allophone [yʔ] which only appears word-final. [bôayʔ] '*to operate on*'.
- /-wh/ is a labialised voiceless fricative [wh] which occurs only word-finally.

2.3. CONSONANT CONTRASTS

In mainsyllable-initial position:

p-	pà?	'four'
t-	ta?	'to cut up'
č-	ča?	'to grow'
k-	kà?	'not yet'
ʔ-	ʔà?	'raven'
ph-	kaphà?	'window'
th-	čatha?	'smooth'
kh-	kha?	'to restrain someone'
b-	ba?	'to carry in carrying cloth'
d-	dah	'then'
m-	ma?	'to take'
n-	anà?	'child'
ñ-	čaña	'to ask'
ng-	nga?	'to make'
r-	rà?	'greedy'
l-	là?	'bee food'
s-	sà?	'fishtrap'
h-	hà?	'to tear up'
w-	awà?	'spoon'
y-	paya?	'prayer for protection'
ʔw-	ʔwa?	'to wipe'
ʔy-	ʔyà?	'to carry in hand'

In mainsyllable-final position:

short vowels			long vowels	
-p	sap	'voice'	sàp	'to scold'
-t	dat	'small'	dòt	'only'
-k	phak	'sound of breaking stick'	lapàk	'bamboo spear'
-ʔ	pa?	'to weave (bamboo)'	pà?	'four'
-m	kram	'to sink'	kràm	'bamboo'
-n	kan	'epileptic'	akàn	'fish'
-ng	khang	'stiff'	khàng	'burning hot'
-l	asal	'grain'	sàl	'type of gongs'
-s	abas	'ouch!'	pès	'to beckon'
-h	mamah	'to chew'	màh	'gold'
-w	tlaw	'three'	tlàw	'to laugh'
-y	čapay	'ricewine'	kapày	'rabbit'
-ʔw	laʔw	'time, turn'	kalàʔw	'cockroach'

continued overleaf

<i>short vowels</i>			<i>long vowels</i>		
-ʔy	braʔy	'to squirt'	ʔyràʔy	'to insult'	
-wh	prôwh	'to blow'	prôwh	'to spit out'	
--	--	--	sa	'one'	

2.4. CONSONANT CLUSTERS

There are five types of consonant clusters in Haro1. One type has the modifying consonant before the cluster centre (h in preaspirated consonants), four types have the modifying consonants following the cluster centre (y in palatalised consonants, w in labialised consonants, and clusters with r and l).

The cluster centre may be a simple or an aspirated consonant. Not all consonants can function as cluster centres and those that can do not occur with every modifying consonant as shown in Figure 3.

<i>CLUSTER CENTRE</i>	<i>CLUSTER MODIFIER</i>				
	h	y	w	l	r
m	hm	-	-	-	-
n	hn	-	-	-	-
ñ	hñ	-	-	-	-
ng	hng	-	-	-	-
r	hr	-	-	-	-
l	hl	-	-	-	-
w	hw	-	-	-	-
y	hy	-	-	-	-
p	-	py	-	pl	pr
t	-	-	-	tl	tr
č	-	-	čw	-	-
k	-	-	kw	-	kr
ph	-	phy	-	-	-
th	-	-	thw	-	-
kh	-	-	khw	-	-
b	-	by	-	bl	br
ʔy	-	-	-	-	ʔyr
s	-	-	sw	-	-

Figure 3.

2.5. CONSONANT CLUSTER CONTRASTS

hm-	hmaw	'to have'
hn-	kahnàl	'equal'
hñ-	hahñep	'open-eyed'
hng-	hnga?-hngòm	'crowded'
hr-	čahrà?	'to throw a long object'
hl-	hlam	'very'
hw-	hwə?y	'afraid'
hy-	hyə?-hyə?	'walking stalkingly'
pl-	plah	'to stick into'
tl-	tlàh	'recovered'
bl-	blah	'to learn by oneself'
pr-	prah	'to stir'
tr-	trôh'	'escaped'
kr-	krah	'ring'
br-	brah	'red (guavas)'
?yr-	?yràng	'panther'
py-	pyong	'light-weighted'
phy-	phyàng-phyàng	'expressive of relief'
by-	byên	'out of shape'
čw-	čwe?	'gossip'
kw-	kwew	'point (of sickle)'
thw-	thwang	'in a long line'
khw-	khwèn	'classifier for rings'
sw-	swen	'crazy'

3. PHONEME DISTRIBUTION

Haroi words are made up of a main syllable which may be preceded by one or two unstressed presyllables.

3.1. PRESYLLABLES

The presyllables have the pattern C_1a . Only the vowel /a/ [ə] which has the allophone [ɪ] following an alveopalatal consonant, appears in a presyllable. /čakay/ [čɪkay] 'foot'. A presyllable beginning with the consonant m loses the vowel except before an initial m or n in the main syllable. /malaw/ [mɪlaw] 'embarrassed', /mamih/ [məmih] 'sweet'.

The consonant position in the presyllable can be filled by p, t, č, k, ?, h, m, n, l, or r. On the restrictions in relation to word patterns (occurring as the only presyllable in two-syllable words, or in first or second syllable in three-syllable words) see Figure 4. The two

presyllables of a three-syllable word cannot begin with the same consonant, but the syllable preceding the main syllable may have the same initial consonant as the main syllable. The presyllables *na-* and *ra-* are only found with main syllables beginning with the same consonants as the presyllable. *nano* 'cylindrical', *raray* 'great-great-grandchild'.

Presyllables:

<i>first of two</i>	<i>second of two</i>	<i>only one</i>
C_1V-	$-C_1V-$	C_1V-
pa-	-	pa-
ta-	-	-
ča-	-ča-	ča-
ka-	-ka-	ka-
a-	-a-	a-
ha-	-ha-	ha-
ma-	-ma-	ma-
-	-	na-
-	-la-	la-
-	-	ra-

Figure 4.

As noted before, since [ŋ] is interpreted as the presyllable /ma/ in two-syllable words, in words such as [tʰɪmɸhɪŋ] it is also interpreted as /ma/ thus giving the three-syllable word /čamaphɪŋ/ 'cord', instead of a closed presyllable and main syllable /čamɸhɪŋ/.⁴

3.2. MAIN SYLLABLE

Main syllables are composed of $C_2V_1 \pm V_2C_5$ or $C_3C_4V_1 \pm V_2C_5$. Initial vowels are always preglottalised so the initial glottal is not written. All 32 vowel contrasts can occur in closed main syllables. Short vowels, however, cannot occur in open syllables, so only 16 vowel contrasts are possible in open syllables.

C_2 main syllable initial position can be filled by any consonant. C_3 cluster-initial position can be filled by p, t, č, k, ph, th, kh, b, ʔy, and s. The modifying C_4 cluster-second position can then be filled by l, r, y, or w. Or, if C_4 is filled by m, n, ñ, ng, r, l, w, or y, C_3 will be filled by h, modifying these consonants. (For possible combinations see Section 2.4.) C_5 can be filled by p, t, k, m, n, ng, l, ʔ, ʔw, ʔy, h, wh, s, w, and y.

V_1 can be filled by any simple vowel. V_2 can be filled only by a and only when V_1 is a high close vowel or ê, or ô.

3.3. VOWEL AND CONSONANT COMBINATIONS

There are few restrictions as to which vowel can follow which syllable-initial consonant, or consonant cluster. There are no high close front vowels, simple or glided, after y and its combinations hy, py, by, or after the palatal nasals ñ and hñ. Parallel to this, no high back vowels, simple or glided, are found after w and its combinations hw, kw, khw, čw, and sw. The glided vowel +a cannot follow simple voiceless stops. There seem to be historical reasons for this.⁵

The restrictions on the possible combinations of vowels and final consonants are shown in Figure 5.

The bilabial rounded vocoid w and its combinations wh and w? are not found after rounded vowels, glided or unglided, except for simple ô, nor do they occur after high and mid central vowels.

The alveopalatal vocoid y and its combinations yh and y? are not found after front vowels, glided or unglided.

The combination wh does not occur after any front vowel which parallels yh not occurring after back vowels, except for u. wh does not follow glided vowels.

The very infrequent high open vowels i and u do not allow any bilabial final consonants, u also cannot be followed by alveopalatal consonants.

Figure 5 overleaf.

	Bilabial C					Coronal C					Back C				
	p	m	w	wh	[w?]	t	n	l	y	[yh]	[y?]	k	ng	h	#
i	2	2	1	-	1	3	7	9	-	-	-	4	4	13	6
ì	2	2	1	-	1	7	3	1	-	-	-		22	1	13
ɪ	-	-	-	-	-				-	-	-		3	6	1
ì	-	-	-	-	-	3	4		-	-	-		4	1	2
ê	1	3	1	-		1	4	3		-		3	5	16	3
ë	1	1		-		3	1	1	10	-	9	2	15	2	1
e	7		3	-		6	2	2	-	-	-	5	12	34	26
è	1			-		7	5	5	-	-	-	7	14	3	1
ɨ		3	-	-	-			1	11	1		3	22	8	12
ɨ̃	2	3	-	-	-		3		2			1	3	1	9
ə		1	-	-	-		3		2		1	2	11	8	19
ə̃	1	2	-	-	-			5	6	7	1	1	10		1
a	6	31	32		14	13	14	20	21	2	2	5	35	50	46
à	6	8	22		3		12	17	11		8	9	38	11	31
u	1	6	-	-	-	8	4	6	3	1	8	8	30	26	12
ù	1	4	-	-	-	3	7	4	16	3	1		20	6	11
u	-	-	-	-	-	-	-	-	-	-	-			4	3
ù	-	-	-	-	-	-	-	-	-	-	-	1	2	1	5
ô	2	5	1	1		8	10	4	4	-	6	4	17	21	10
õ	2	8	4	8	12	1	4	9	4	-	2	1	24	3	10
o		5	-	-	-	10	9	3	19	-	10	10	31	26	19
ò		7	-	-	-		1	8	7	-		7	23	5	23
ia				-					-	-	-				1
ìa	1			-					-	-	-		1		1
êa			1	-					-	-	-	1	2	1	12
ëa		4	5	-	3		1	2	-	-	-		14	3	1
ɨa	4	15	14	-	8	2	7	3	4		1	1	10	22	15
ɨ̃a	2	5	11	-	1		9	12	10		6	2	22	2	6
ua	1	3	-	-	-	4	3	3	3			1	5	3	12
ùa		1	-	-	-		2	6	1				4		1
ôa			-	-	-	2	6	6	5	1	11		3	2	7
õa			-	-	-		2	2	8		3		4	8	11

Figure 5.

4. SUMMARY OF WORD PATTERN

The word can be summarised as follows:

\pm presyllable₁ C₁a \pm presyllable₂ C₁a + main syllable C₂V₁ \pm V₂C₅
or C₃C₄V₁ \pm V₂C₅.

MAIN SYLLABLE	PRESYLLABLES		
	none	C ₁ a-	C ₁ aC ₁ a-
C ₂ V ₁	ni 'here'	hana 'to roast'	malawa 'Iguana'
C ₂ V ₁ V ₂	hêa 'to cry'	kačôa 'firstborn'	malayia 'lizard'
C ₂ V ₁ C ₅	pà? 'four'	kačèang 'messy'	kalamoh 'foam'
C ₂ V ₁ V ₂ C ₅	tôah 'to drain'	čakèang 'give birth'	takarlay 'dragon'
C ₃ C ₄ V ₁ C ₅	prah 'to stir'	katleh 'to break off'	mačaprùy 'yesterday'
C ₃ C ₄ V ₁ V ₂ C ₅	plah 'to split'	čatrang 'guard tower'	čalathu?y 'lined up'
C ₃ C ₄ V ₁	pla 'blade'	katra 'in three days'	takabla 'fearful'
C ₃ C ₄ V ₁ V ₂	krôa 'turtle'	matrua 'sale'	makaprua 'to diverge'

Figure 6.

5. STRESS

In Haroi the main syllable is stressed and the presyllable is unstressed. In the case of two presyllables, the first is slightly heavier stressed than the second presyllable.

NOTES

1. The first author prepared the original draft of the article in 1970, and the second author revised and updated it in 1975.

We are indebted to Dr David Thomas for helpful suggestions during the analysis and in the writing of this paper.

2. Schrock, 1966, p. 219.

3. Word-final *yh* can be considered an allophone of either /s/ or of *hy*. The contrast is neutralised in this position. In this paper word-final *yh* is interpreted as an allophone of /s/ for historical and cross-language reasons (cf. Lee, 1966). In an alternative analysis *yh* could be interpreted as an allophone of initial *hy*, in which case /s/ would not occur in word-final position. This analysis would have to reconsider whether to interpret *hy* as a consonant cluster, or as a single phoneme. If our present view would be continued, this analysis would give a new syllable pattern with a final consonant cluster. (*y* cannot be considered as filling the glided position of the syllable nucleus like *a* because it can follow a glided vowel. *sôayh* 'sober'.) If *hy* and its word-final allophone *yh* are interpreted as one phoneme, and the other preaspirated consonants are also considered to be one phoneme, then final /-wh/ can be an allophone of *hw* also. This would also parallel the present treatment of [ʔw] and [-wʔ], and [ʔy] and [-wʔ].

4. There are two lexical items that could give reasons for reconsideration: [kənθi] 'pulse', and [pəktra] 'red spurlfoal'. But at the present we feel that in *kanthi* the *n* can likewise be treated as a syllabic *ŋ* (cf. /nano/, also pronounced [ŋno] 'cylindrical') giving /kanathi/. This leaves only *paktra* to be investigated. It is suspected to be an unassimilated loan word.

5. In this volume Lee shows that Haroi +a glides after aspirated stops can be traced back to Proto-Chamic unpreglottalised voiced stops plus simple a . The systemic absence of +a after unaspirated stops might be connected with this development.

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REGISTER IN WESTERN CHAM PHONOLOGY¹

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0. Introduction
1. Phonological Word
2. Consonants
3. Vowels

0. INTRODUCTION

An almost family-wide trait of Mon-Khmer languages has been called *register*. The term first used for Khmer by Henderson (1952) describes the binary opposition of certain features such as vocalic openness, voice quality, pitch, and consonant voicing. Where not present synchronically, register is often reconstructable in the proto form (cf. Smith 1973). Studies by Haudricourt (1954) and others have shown the relationship between such tonal languages as Vietnamese and Mon-Khmer register languages. It is perhaps not unreasonable to inquire further whether register may have even existed as a feature of Proto-Austroasiatic.

Austronesian languages have certain characteristics in common with Austroasiatic, such as affixation, syllable patterns as well as some shared vocabulary; enough so that Wilhelm Schmidt postulated Austric as the super-family. Javanese has been described as having both breathy vowels and a lowering of pitch following voiced consonants.⁴ Eastern Cham has pitch as a prosodic feature in analogous phonological words.⁵ The present paper looks at Western Cham⁶ phonology and concludes that its primary opposition is register.

As register has been applied to many Mon-Khmer languages,⁷ so now in Western Cham⁸ the notion of register is further applied to Austronesian.⁹ Since Western Cham is no longer viewed as genetically connected with Mon-Khmer, how is it then that Western Cham has register? Did it arise from the long interplay between Western Cham and Khmer? Western Cham has co-existed in a checkerboard pattern with Khmer for some four hundred years. Before that Proto-Chamic and some of its daughter languages developed alongside of Old and Middle Khmer for upwards of one thousand years. On the other hand, might there be an ancient prosodic bifurcation in Western Cham, Khmer, and other mainland languages which antedates the period of their common history? If that is the case, perhaps Western Cham offers register, which is not evident in the island representatives of Austronesian, as evidence to be accounted for in the reconstruction of Proto-Austronesian.

1. PHONOLOGICAL WORD

The phonological word in Western Cham is marked for two defining features: stress and register. The phonological word may be represented for stress as

PW → (SYLL) SYLL

where the main syllable is obligatory and has heavy stress, and the preliminary syllable is optional and has weak stress. Every phonological word ends with heavy stress. In the small class of three syllable words noted below (note 12), the first syllable is weakly stressed, and the second syllable is further reduced; the final syllable receives heavy stress. Thus the first, second, and third syllables in the Western Cham word may be called pretonic, atonic, and tonic respectively.

The other feature which functions at the phonological word level in Western Cham is register. Briefly for Khmer (Henderson, 1952) this involves the following oppositions: *voice quality* - normal, head, clear, and tense versus deep, breathy, spulchral, chest, and relaxed; *vowel quality* - more open, onglided versus close, centering diphthongs; *pitch* - relatively higher versus relatively lower (larynx also lowered); and finally, *initial*¹⁰ (*written*)¹¹ *consonants* - (original) voicelessness versus (original) voicing, for the first register versus the second register respectively.

Gregerson (to appear) has suggested that the physiological basis for Mon-Khmer register as well as other variously designated phenomena in other languages of the world is the position of the tongue root. Western Cham appears to employ precisely this parameter tongue root

advancement ([TRA]) at the phonological word level.

$$PW \rightarrow \left\{ \begin{array}{l} [+TRA] \\ [-TRA] \end{array} \right\}$$

Phonological words thus marked define two registers or prosody oppositions which constitute constraints on vocalic and consonantal occurrences within the phonological word. Every segmental occurrence (whether vowel or consonant) of the feature [TRA] within the phonological word must agree as to its sign (\pm) with every other occurrence.

$$PW \rightarrow \neq [\alpha TRA] \dots [\alpha TRA] \neq$$

Each is dealt with in turn below.

In terms of segmental types, the phonological word in Western Cham conforms to the following formula:

$$PW \rightarrow (C_2 V_2) C_1 (C_3) V_1 (C_4)$$

where C_1 is the tonic syllable initial consonant; C_2 the optional atonic syllable consonant; C_3 an optional /l/ or /r/ as a tonic syllable cluster; C_4 the tonic syllable final consonant; where V_1 is the tonic syllable vowel and V_2 is /a/ ([a]~[ʌ]).¹²

$C_1 V_1$	/da/	'duck'
	/po/	'master'
$C_1 V_1 C_4$	/kan/	'fish'
	/ʔbaʔ/	'contagious'
$C_1 C_3 V_1$	/gla/	'crazy'
	/jru/	'medicine'
$C_1 C_3 V_1 C_4$	/hrum/	'sheath'
	/blǎy/	'to buy'
$C_2 V_2 C_1 V_1$	/taha/	'aged'
	/tasi/	'comb'
$C_2 V_2 C_1 V_1 C_4$	/kakan/	'to chew the cud'
	/manayh/	'pineapple'
$C_2 V_2 C_1 C_3 V_1$	/cakla/	'lightning'
	/pahla/	'to hold a ceremony'
$C_2 V_2 C_1 C_3 V_1 C_4$	/madrum/	'guava'
	/tañraʔ/	'dazzling'

2. CONSONANTS

The primary opposition in the set of consonant segments is the tongue root advancement ([TRA]) feature. This feature divides the consonants into two natural classes by which they are mapped on to the syllable level of the phonological word. Other distinctive features of Western Cham consonant phonology are [±continuant], [±glottal], [±nasal], [±aspiration], [±coronal], and [±anterior]. The following charts the consonant segments:

	[-TRA]				[+TRA]			
	[+ant -cor]	[+ant +cor]	[-ant +cor]	[-ant -cor]	[+ant -cor]	[+ant +cor]	[-ant +cor]	[-ant -cor]
[-asp]	p	t	c	k	p(*b) ¹³	t(*d)	c(*j)	k(*g)
[-gltt]								
[+asp]	ph	th	ch	kh	ph(*bh)	th(*dh)	ch(*jh)	kh(*gh)
[-cont]								
[+gltt]	?b	?d	?j	?				
[-nas]		s		h	w	l	y	r
[+cont]								
[+nas]					m	n	ñ	ŋ

CHART ONE

The [+TRA] stops are not voiced synchronically. What then distinguishes between the otherwise identical sets of stops? Is the feature [TRA] merely a dummy feature? The evidence seems to indicate otherwise. A voiceless stop [+TRA] precedes a vowel segment of the same vowel height and voice quality as does the voiced segment $\begin{bmatrix} +TRA \\ +cont \end{bmatrix}$. If no neutralising of vowel height or voice quality thus results in the direction of what is found in a [-TRA] stop-vowel sequence, it is perhaps safe to inquire whether the $\begin{bmatrix} +TRA \\ -cont \end{bmatrix}$ set is not actually characterised by an advanced tongue root. Though such an advanced tongue root is undetectable to the human eye, we expect that acoustic measuring of Western Cham stops will indicate a difference between the two sets based on the position of the tongue root. Gregerson's arguments (to appear) for the feature TRA further support our hypothesis.

While the two sets of stops are *only* distinguished by [TRA], the pairs of /s,l/ and /h,r/ have other features that distinguish them, though not relevant here.

Any consonant in Chart One above may be the tonic syllable initial consonant, the C₁ of the segment formula, as long as it agrees with the PW [TRA] type. Furthermore, every C₁ consonant may be preceded by an

atonic syllable. The atonic syllable consonant is much more restricted as to what may occur. Consonant segments marked [+asp] are not permitted, with rare exception, e.g. /thanǎw/ 'magical power' from /thǎw/ 'to know' by infixation. Consonants marked [+glottal] are excluded with the regular exception of /ʔ/. Historically words with an /ʔa-/ atonic syllable were very common. Presently most such words may drop the atonic syllable, so it is expected that the direction of the language is towards excluding all [+glottal] syllables of this type.

/ʔabih/ → /bih/ 'all'

Of segments marked $\begin{bmatrix} +\text{cont} \\ +\text{nas} \end{bmatrix}$ only /m/ is permitted as the atonic syllable initial consonant with the exception of /n/ in a few words which may vary with /l/ among the dialects.

/nagǎr/ ~ /lagǎr/ 'country'

Thus the admissible atonic syllable initial consonants may be charted as follows:

p	t	c	k	p(*b)	t(*d)	c(*j)	k(*g)
			ʔ				
s		h	m				
			w	l	y	r	

As has been indicated above, the position of the tongue root is the most important limitation on consonant occurrence. Consonant segments are admitted into any pretonic, atonic, or tonic syllable consonant initial position when their [TRA] values agree with the [TRA] specification of the phonological word. Thus in monosyllables, /m/ e.g. is admitted into a syllable initial consonant position for phonological words specified as [+TRA], but it would be rejected from phonological monosyllables of [-TRA] specification.

PW _[+TRA]	/bom/	'one with night blindness'
	/ŋuy/	'to wear below the waist'
PW _[-TRA]	/tom/	'to meet'
	/sit/	'small'

(All phonemic examples in this paper replace [+TRA] /p t c k/ with /b d j g/ for easy recognition.)

Dissyllables also conform to the phonological word [TRA] specification.

PW _[+TRA]	/daning/	'wall'
	/mabũʔ/	'drunk'
	/babayh/	'sheep'
	/ramɔŋ/	'tiger'

PW _[-TRA]	/tasiʔ/	'ocean'
	/haciʔ/	'clean'
	/kaʔjah/	'bad'
	/hasɿt/	'a little'

Underlying this harmony of [TRA] specification with the phonological word is the phenomenon:

- (1) $\begin{bmatrix} +\text{TRA} \\ -\text{cont} \end{bmatrix} \begin{bmatrix} -\text{TRA} \\ +\text{cont} \end{bmatrix} \rightarrow [+TRA][+TRA]$
- (2) $[-TRA] \begin{bmatrix} +\text{TRA} \\ +\text{cont} \end{bmatrix} \rightarrow [-TRA][-TRA]$

Some consonants which normally carry the feature [α TRA] will be marked [- α TRA] in certain environments. In (1) above, tonic syllable initial $\begin{bmatrix} -\text{TRA} \\ +\text{cont} \end{bmatrix}$ consonants will be marked [+TRA] when preceded by an atonic initial $\begin{bmatrix} +\text{TRA} \\ -\text{cont} \end{bmatrix}$ consonant. (2) allows the opposite. [+TRA] is marked [-TRA] in any tonic syllable initial [+cont] consonant whose atonic syllable is [-TRA].

PW _[+TRA]	/bahǎw/	'new'
PW _[-TRA]	/karo/	'healthy'
	/hanɨŋ/	'crossbow'

The phonological word [TRA] harmony specification rule is blocked at one point in Western Cham phonology. The following occur contrary to expectation:

- (3) $\begin{bmatrix} -\text{TRA} \\ +\text{cont} \end{bmatrix} \wedge \begin{bmatrix} -\text{TRA} \\ +\text{voc} \end{bmatrix} \wedge \begin{bmatrix} +\text{TRA} \\ -\text{cont} \end{bmatrix} \wedge \begin{bmatrix} +\text{TRA} \\ +\text{voc} \end{bmatrix}$
- (4) $\begin{bmatrix} +\text{TRA} \\ +\text{cont} \end{bmatrix} \wedge \begin{bmatrix} +\text{TRA} \\ +\text{voc} \end{bmatrix} \wedge [-TRA] \wedge \begin{bmatrix} -\text{TRA} \\ +\text{voc} \end{bmatrix}$

To deal with this occurrence such tonic syllable segments must have the limiting feature [+RULE BLOCK] added to the above string of segment features. Thus a disharmonious syllable sequence is allowed into Western Cham phonology.

PW _[+TRA]	/lasǎy/	'cooked rice'
	/lakǎw/	'to request'
PW _[-TRA]	/kabaw/	'buffalo'
	/hadom/	'how much'

The maximum expansion of the phonological word in Western Cham allows for three syllables. Such sequences of syllables also are constrained by the [TRA] phonological word feature specification. In cases of the phenomenon noted in (1) and (2) above and in the contrary to expectation occurrences in (3) and (4), the three syllables

Syll ₁	Syll ₂	Syll ₃
(pretonic)	(atonic)	(tonic)

are dealt with first as Syll₁ and Syll₂ considered together, and then their combined output as a unit is added to Syll₃.

(Syll ₁ + Syll ₂) + Syll ₃
/balakiəŋ/ 'hornbill'

It may seem strange that the initial syllable in Western Cham phonological words is ever consistent with the PW_[TRA] sign and that the few inconsistencies occurring are found in the tonic syllable. The tonic syllable thus seems to lose some of its importance, which alone carries stress and vowel differentiation (pretonic and atonic syllables have only /a/). The answer lies in a look at the proto language types which stress the penultimate syllable and which permit the full array of vowels in non-final syllables. Therefore Western Cham comes from ancestors in which stress and full vowel displays occurred on the penultimate syllable. The synchronic vowel restriction to and stress placement on the final syllable in Western Cham perhaps hints at the direction of [TRA] specification in the future.

It is evident in Western Cham that there are some consonant segments, viz. [+cont], which are especially sensitive to the sign of the phonological word [TRA] specification. On the other hand, consonants marked [-cont] resist that same specification in certain environments. There seems to be a ranking of consonants as to strength. While the concept of consonant ranking is nothing new (compare Pike (1954) on Mexican languages and Purtle (1969) on Southeast Asian languages), it remains to be spelled out exactly what is the relationship of consonant ranking to the concept of tongue root movement.

The consonant chart on page 20 may be quartered along the lines of [±TRA] and [±cont]. From this division it may be seen that atonic and tonic initial consonants may combine into words in sixteen potential pairs. Of these, we find fifteen combinations actually occurring in Western Cham. Only the $\begin{bmatrix} +TRA \\ -cont \end{bmatrix} \begin{bmatrix} -TRA \\ -cont \end{bmatrix}$ initial consonant sequence combination does not occur. Synchronically this has become the sequence $\begin{bmatrix} -TRA \\ -cont \end{bmatrix} \begin{bmatrix} -TRA \\ -cont \end{bmatrix}$.¹⁴

Clustering is a regular feature of Cham. The optional C₃ consonant admits either /l/ or /r/. In every case the cluster formed conforms to the conditions on consonant occurrence noted above. Both /l/ and /r/ are [+TRA] but may be realised as [-TRA] to occur with the word patterning of [TRA] where necessary. What is an atonic syllable plus a tonic syllable and what is a tonic syllable plus /l/ or /r/ are distinguished

by such minimal pairs as /barah/ 'to swell up' and /brah/ 'pounded rice'. A cluster may be preceded by an atonic syllable, as in /paʔbləʔ/ 'to deceive'. /r/ may cluster with the following consonants:

p	t	c	k	p(*b)	t(*d)	c(*j)	k(*g)
ʔb	ʔj						
s		h	m	n		ɲ	

/l/ is more restricted, not occurring with [+nas] nor with $\begin{bmatrix} -\text{cont} \\ +\text{cor} \end{bmatrix}$.

/w/ might be also considered a consonant segment which is admitted into clustering, as /Cw/ + /a/ (the only vowel with which it occurs). Instead in this environment it is analysed as /ɔə/ below. /h/ is not analysed as C₃ because it has the limited occurrence of being found with voiceless stops only. Nasals and alveolar stops cluster phonetically with preceding /h/ and /s/ respectively, but this is not construed as phonemic, because they do not allow an atonic syllable to precede them and because native speakers separate them in deliberate speech.

/hamɪ/	[hmɪ]	'wet farm'
/sadaŋ/	[staŋ]	'sugar'

Final consonants (C₄) are indicated by the following array:

p	t		k
			ʔ
			h
m	n		ŋ
w	l	y	r
wʔ		yʔ	rʔ
		yh	

Register has no visible effect on final consonants in Western Cham. Though there may be some carry-over effect from the rest of the syllable, it is not detectable without instrumentation. It is probable that in the final consonants the tongue root resumes a neutral position (see note 10).

/w y r/ represent semiconsonant counterparts of [u i ɪ] respectively. /wʔ yʔ rʔ/ are analysed as complex phonemic units. The generality lost in this analysis is offset by the economy gained in the corresponding vowel analysis. Not to take /wʔ yʔ rʔ/ as complex final units would necessitate /w y r/ being analysed with preceding vowels as off-glides. This grouping would add a three-vowel category to the glides, greatly burdening economy in description. The same reasoning applies to /yh/.

Some historical comment on Western Cham consonants is in order here. As mentioned earlier, there was originally a distinction between voiced and voiceless stops. The Cham script, now largely in disuse among

Western Cham speakers, makes this distinction. Final /yʔ/ was originally final */c/ and final /yh/ was once final */s/. As noted above, consecutive consonants of the form $\begin{bmatrix} +\text{TRA} \\ -\text{cont} \end{bmatrix} \begin{bmatrix} -\text{TRA} \\ -\text{cont} \end{bmatrix}$ in Proto-Chamic have become $\begin{bmatrix} -\text{TRA} \\ -\text{cont} \end{bmatrix} \begin{bmatrix} -\text{TRA} \\ -\text{cont} \end{bmatrix}$ today. *baʔar becomes /paʔar/ 'paper'.

Eastern Cham today has the eight $\begin{bmatrix} +\text{TRA} \\ +\text{cont} \end{bmatrix}$ consonant segments as [-TRA]. Though no available analysis of Eastern Cham deals with phonemes in terms of tongue root position, it is recorded to have a lower pitch in words analogous to what Western Cham has as [+TRA] for the [-cont] consonants. That this parallel is lacking for the consonants marked [+cont] shows a massive switch since Proto Cham. Apparently this change came from the influence of Khmer which has a complete correspondence of like [TRA] sets with Western Cham.

/p b ph bh ʔb/

Tonic Syllable Initial:

/p/	[p]	/pǎʔ/	'to string'
		/kapah/	'cotton'
/b/	[p]	/bom/	'one with night blindness'
		/tabeəʔ/	'to go out'
/ph/	[p ^h]	/pha/	'thigh'
		/capah/	'trousers'
/bh/	[p ^h]	/bhiʔ/	'monk'
		/pabha/	'to distribute'
/ʔb/	[ʔ]	/ʔbǎʔ/	'salty'
		/paʔbǎŋ/	'door'

Atonic Syllable Initial:

/p/	/pacǎŋ/	'to protect'
/b/	/badǎn/	'body'

Tonic Syllable Initial containing /r l/:

/p/	/prah/	'to dig, scratch'
	/papruŋ/	'to enlarge'
	/pla/	'to plant'
	/taplaʔ/	'to overturn'
/b/	/brǎy/	'to give'
	/kabrayʔ/	'to scrape'
	/blǎy/	'to buy'
	/ʔablɔə/	'elf, fairy'
/ʔb/	/ʔbrǔm/	'arrow'
	/ʔbleŋ/	'slanted, unlevel'
	/paʔblǎn/	'to glance disapprovingly'

Atonic Syllable:

/c/	/caʔbu/	'to expose to sun'
/j/	/jadu/	'deflated'

Tonic Syllable Initial containing /r/:

/c/	/crayʔ/	'to shine'
	/pacroʔ/	'to feed'
/j/	/jrɨ/	'cane'
	/lajrǎw/	'crowded'
/ʔj/	/ʔjrǎw/	'thornless bamboo'

Tonic Syllable Final:

/c/ historically */c/ but has become /yʔ/ (see /yʔ/)

/k g kh gh ʔ/

Tonic Syllable Initial:

/k/	[k]	/kǎn/	'poor'
		/laka/	'wound, sore'
/g/	[k]	/gah/	'direction'
		/lagɛh/	'easy'
/kh/	[kʰ]	/khan/	'to tell'
		/lakhah/	'to marry'
/gh/	[kʰ]	/gha/	'root'
/ʔ/	[ʔ]	/ʔaw/	'shirt'
		/laʔan/	'cold'

Atonic Syllable Initial:

/k/	/kaʔiŋ/	'waist'
/g/	/gabaʔ/	'to walk'
/ʔ/	/ʔkhǎr/	'letter, character'

Tonic Syllable Initial containing /r l/:

/k/	/krɛʔ/	'a kind of tree'
	/kakran/	'saw fish'
	/kleh/	'to separate'
	/pakloʰ/	'to break, sever'
/g/	/gre/	'bed'
	/lagrǎm/	'cadence'
	/gleh/	'exhausted'
	/taglaw/	'a kind of tree'

Tonic Syllable Final:

/k/	[kʰ]	/lak/	'to hit the target'
/ʔ/	[ʔ]	/laʔ/	'flat'

*/s h/**Tonic Syllable Initial:*

<i>/s/</i>	[s]	<i>/sa/</i>	'one'
		<i>/tasǎw/</i>	'breast'
<i>/h/</i>	[h]	<i>/hay/</i>	'also'
		<i>/kahe/</i>	'a kind of fish'

Atonic Syllable Initial:

<i>/s/</i>	<i>/saʔbo/</i>	'colour'
<i>/h/</i>	<i>/hadǎr/</i>	'to recall'

Tonic Syllable Initial containing /r l/:

<i>/s/</i>	<i>/srǎm/</i>	'to practise'
	<i>/pasru/</i>	'funny'
	<i>/slo/</i>	'specialised marriage word'
	<i>/maslǎr/</i>	'pale'
<i>/h/</i>	<i>/hri/</i>	'to sing'
	<i>/mahrǎy/</i>	'day before yesterday'
	<i>/hlǎy/</i>	'where'
	<i>/dahliŋ/</i>	'to tie'

Tonic Syllable Final:

/s/	historically */s/ but has become /yh/ (see /yh/)
/h/	/tah/ 'far'

*/w l y r/**Tonic Syllable Initial:*

<i>/w/</i>	[w]	<i>/waw/</i>	'stringed instrument'
		<i>/yawa/</i>	'spirit'
<i>/l/</i>	[l]	<i>/lǎw/</i>	'to file'
		<i>/talǎy/</i>	'string, line'
<i>/y/</i>	[y]	<i>/yǎw/</i>	'as, like'
		<i>/kaya/</i>	'rich'
<i>/r/</i>	[g]	<i>/raw/</i>	'to wash'
		<i>/tariəŋ/</i>	'diligent'

Atonic Syllable Initial:

<i>/w/</i>	<i>/wajǎp/</i>	'bond'
<i>/l/</i>	<i>/lanuəy/</i>	'moss'
<i>/y/</i>	<i>/yamɪn/</i>	'sweet'
<i>/r/</i>	<i>/ralɔ/</i>	'flesh'

Tonic Syllable Final:

<i>/w/</i>	[^u]	<i>/sǎw/</i>	'dog'
------------	------------------	--------------	-------

/w /	[^u ʔ]	/sǎwʔ/	'smoke'
/l/	[l]	/tǔl/	'mattress'
/y/	[ⁱ]	/glay/	'forest'
/yʔ/	[ⁱ ʔ]	/layʔ/	'to say'
/yh/	[ⁱ h]	/nayh/	'intelligent'
/r/	[⁺]	/sǎr/	'seed'
/rʔ/	[⁺ ʔ]	/mirʔ/	'younger uncle'

/m n ñ ŋ/

Tonic Syllable Initial:

/m/	[m]	/may/	'to come'
		/yam+n/	'sweet'
/n/	[n]	/nay/	'queen'
		/banay/	'female animal'
/ñ/	[ɲ]	/ñuy/	'gnat'
		/tañ+ /	'ear'
/ŋ/	[ŋ]	/ŋuy/	'to wear below the waist'
		/paŋǎt/	'to caution'

Atonic Syllable Initial:

/m/	/malǎm/	'night'
/n/	/nagǎr/	'country'

Tonic Syllable Initial containing /r l/:

/m/	/mray/	'cotton thread'
	/tamraʔ/	'lead (metal)'
/n/	/nrəʔ/	'bridle'
	/tanrǎwʔ/	'weight'
/ñ/	/tañraʔ/	'dazzling'

Tonic Syllable Final:

/m/	/jam/	'dish'
/n/	/jan/	'to rain'
/ŋ/	/caŋ/	'to wait'

3. VOWELS

Western Cham has a basic three by three phonemic vowel system. This is comparable to Eastern Cham and other Chamic languages. Lee (1974) discusses the vowel inventory of Chamic languages and then compares it with the rest of Austronesian where a four vowel system is the norm. It is evident that all of Chamic increased its vocalic distinctions to approximate roughly the existing array of Mon-Khmer languages at an early date.

		[-bk]		[+bk]	
				[-rd]	[+rd]
		[-gl]	[+gl]	[-gl]	[+gl]
[+hi]	[+lg]	i	iə	ɨ	uə
	[-lg]	ɨ		ʊ	
[-hi]		e		ə	o
	[-lo]				
[+lo]	[+lg]	ɛ	ɛə	a	ɔə
	[-lg]	ɛ̃		ă	ɔ̃

CHART TWO

The three by three vowel system comes from a back versus nonback tongue position; the back vowels further divide as to rounding; and a three way tongue height distinction: high, mid, and low. Further vowels come from the features [long] and [glided] giving 18 syllable nuclei. The short vowels occur with only some of the finals with which long vowels occur, and never in open syllables. Thus long vowels are taken as the norm. Shortness is usually noted by shorter duration only, but a difference in vowel height is noted in the following cases. Short /ɨ/ becomes [ɨ̃] before all nasal and alveolar finals; before other finals it is heard as [ĩ]. Its long counterpart is heard as [ĩ·] with all finals. Similarly short /ʊ/ becomes [ũ] before alveolar finals (but not nasals); [ũ] elsewhere. Long /u/ is heard as [ũ·] in every case. /ɛ/, though heard as [ɛ̃^e] when long, is [ɛ̃] short in most regions. /vɨ/ is phonetically short. It is the only VC combination which does not have a long counterpart. It is written without the diacritic.

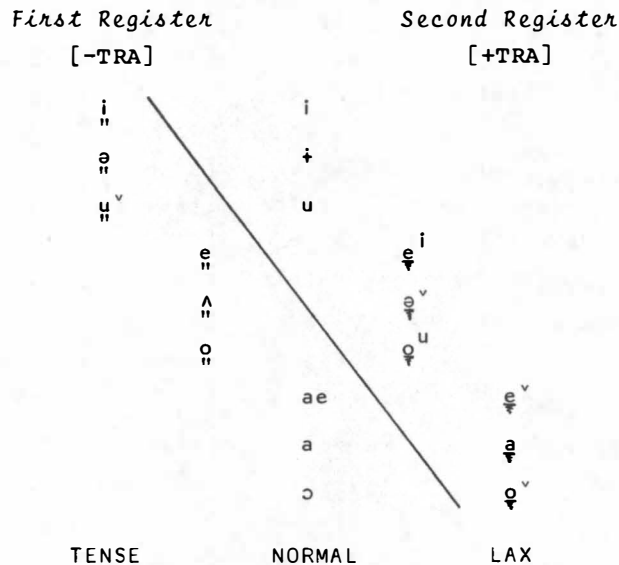
/i ɛ u ɔ/ may also be modified with a glide to [ə̃]. Thus there is a three-way contrast with the long and short vowels and glides:

/tuʔ/ 'section'
 /tʊʔ/ 'stew'
 /tuəʔ/ 'a kind of tree'

/a/ has an onglide [^ua] (sometimes [ua]) which as noted above could be analysed as a cluster, /Cwa/. Instead it is here analysed as /ɔə/. The other three vowels plus glide to neutral vowel are phonetically [ĩ^a], [ɛ̃^a], and [ũ^a]. What presses us to analyse [^ua] as /ɔə/ is the parallel case of /ɛə/. Synchronically Western Cham has developed /ɛə/ from an earlier [ĩ^a]. There are still traces of [ĩ^a] ~ [ĩ^ɛ] though it is now overwhelmingly [ɛə]. Eastern Cham maintains the older form /ya/ or [ĩ^a]. Therefore we adjust our phonemicisation to account for an

almost completed change. Eastern Cham has /ya/ and /wa/ where Western Cham has the shifted forms /eə/ and /oə/ respectively. /paʔdɛəʔ/ [paʔdɛ^əʔ] ~ [paʔdⁱɛʔ] 'hot': shift nearly complete. /dɔən/ [t^uan] 'to pick': shift only beginning.

The feature [TRA] is an integral part of the Cham vowel system. Chart Two, though phonemic, would represent only half of the phonetic realisation of the vowel system. It may be marked [+TRA] for example, and a second parallel chart marked with the opposite [-TRA]. Register opposition in Cham is phonetically more evident in the vowel, though its domain is over consonant and vowel alike. First, all nine vowel pairs contrast in voice quality with the second register being slightly breathy. The high vowels for first and second register respectively contrast as tense (ɪ) versus normal (i) voice quality. The mid vowels contrast as tense (e) versus lax (ɐ). The low vowels contrast as normal (a) versus lax (ɔ).¹⁵ This phenomenon is shown more clearly by the following charting of the vowels that are heard phonetically in Cham (note however that environment causes some adjustments below):



As Gregerson (to appear:11-12) notes, this opposition of voice quality is conditioned by the forward/backward movement of the tongue root. He also notes the effect of the position of the tongue root on tongue body height, and thus on vowel height. First register is usually manifested by a lower vowel than the second register. /a i/ alone do not show this lowering. Second register also displays a lower pitch in analogous vowels in Western Cham.¹⁶ Length and glided vowels occur equally in

both registers. What is found in one register is paralleled in the second.¹⁷

Words which are marked [+TRA] take a second register vowel, that is, a vowel which may differ from the first register counterpart in voice quality, vowel height, and/or pitch. An advanced tongue root constrains the vowels and consonants such that only those marked [+TRA] are admitted, whichever the syllable. In atonic syllables, which take only /a/ except in non-adapted loans and names, the vowel differs only in vowel quality, whereas the main focus of the tonic syllable allows for difference in vowel height as well.

The following examples are illustrative of the various vowel manifestations in given environments. As noted before, a vowel preceding final /h/ is always short, so examples in that environment are omitted here.

Nonback Vowels /i a e/:

/i/	[i·]		/sit/		'small'
			/mañi/		'sound'
/iə/	[iǎ]	(___/w/~/w?/)	/iəw?/	[iǎ ^u ?]	'to see'
			/iəw/	[iǎ ^u]	'to call'
	[iə]	(elsewhere)	/siət/		'to slide on seat'
			/kiə/		'close fit'
/ɪ/	[ɪ]	(___ [+nas] [+cor] [+ant])	/khɪm/	[k ^h ɪm]	'to smile'
			/hasɪt/	[hasɪt]	'a little'
	[i]	(elsewhere)	/kliɪk/	[klik]	'to tickle'
/e/	[e _ɪ]	(C[-TRA]___/?/)	/pate?/	[pate _ɪ ?]	'sarong'
	[e ⁱ]	(elsewhere)	/plen/	[ple ⁱ ŋ]	'instrument'
			/page/	[pake ⁱ]	'tomorrow'
/ɛ/	[e _ɛ ·]	(C[+TRA]___)	/meɛ?/	[me _ɛ ·?]	'mother'
	[ae]	(C[-TRA]___)	/pɛt/	[paet]	'out of shape'
/ɛ̃/	[ɛ̃]		/sɛ̃t/		'same as'
			/tɛ̃?/		'worn out'
/ɛə/	[ɛǎ]	(___/h/~/?/)	/ʔbeəh/	[ʔbeǎh]	'enough'
			/paʔd ?/	[paǎdeǎ?]	'hot'
	[ɛə]	(elsewhere)	/heə/		'to cry'
			/teən/		'stomach'

Back Unrounded Vowels /ɨ ə a/:

/ɨ/	[ə·]	(C[-TRA]___C)	/pɨ?/	[pə·?]	'flower petal'
	[ɨ·]	(elsewhere)	/lanɨŋ/		'wide'
			/hɨ/		'you (fam.)'

/ə/	[ʌ]	(C[-TRA]—[-ant -cor])	/təʔ/	[tʌʔ]	'to weigh'
	[ə̃ ^v]	(C[+TRA]—[-ant -cor])	/bəʔ/	[pə̃ ^v ʔ]	'to dam'
	[ɨ]	([+nas]—[-ant -cor])	/məʔ/	[mɨʔ]	'to carry'
	[ʌ·]	(elsewhere)	/ʔdʌ/		'to equal'
/a/	[a·]		/kan/	[ka·n]	'fish'
/ǎ/	[a]		/kǎn/	[kan]	'poor'

Back Rounded Vowels /u o ɔ/:

/u/	[u·]		/tuʔ/		'section'
/ũ/	[u]	(—[+ant +cor])	/thũn/	[tʰun]	'year'
	[u]	(elsewhere)	/drũt/	[tʰut]	'dimple'
/o/	[o _u]	(C[-TRA]—C)	/tũʔ/	[tuʔ]	'stew'
	[o ^u]	(elsewhere)	/pom/	[p _u om]	'woods'
/ɔ/	[õ ^v ·]	(C[+TRA]—)	/lo/	[lo ^u]	'many'
	[ɔ·]	(C[-TRA]—)	/dɔʔ/	[t _{õ^v} ·ʔ]	'to be at'
	[ɔ̃ ^v]	(C[+TRA]—)	/tɔʔ/	[tɔ·ʔ]	'bottom'
/ɔ̃/	[õ ^v]	(C[+TRA]—)	/bɔ̃ʔ/	[p _{õ^v} ʔ]	'to rot'
	[ɔ]	(C[-TRA]—)	/pɔ̃ʔ/	[pɔʔ]	'to peel'
/ɔə/	[^u a]		/hɔəʔ/		'to eat'
			/thɔə/		'to travel'

NOTES

1. Special appreciation is due Kenneth Gregerson for his suggestions at various stages in the development of this paper, and Ernest W. Lee for comments from his background in Chamic studies.
2. Summer Institute of Linguistics, Phnom Penh, Khmer Republic.
3. Ministry of National Education, Phnom Penh, Khmer Republic.
4. Henderson (1965), Horne (1961).
5. Blood (1967).
6. Western Cham is a member of the Chamic subfamily of Austronesian. It is spoken in certain parts of the Khmer Republic (Cambodia) and in the western section of the Vietnamese Delta region. Its speakers number some 30,000 persons in Viet Nam and something in excess of 150,000 in Cambodia. Other Chamic member languages include Roglai, Eastern Cham, Chru, Jarai, Rade, and Haroi. (In the literature Eastern Cham or Coastal Cham is usually referred to simply as Cham, and Western Cham usually as Cambodian Cham or Khmer Islam. This description represents about a year's contact with Cham speakers in the Phnom Penh area in 1972-3.
7. See Gregerson (to appear) who lists eight Viet Nam languages with register (p.5). Also Shorto (1967) for Mon.
8. Chamic was once classed within Mon-Khmer by such early investigators as Schmidt (1907) and Przyluski (1924). Such studies as Pittman (1959), Thomas (1963), and Lee (1965) provide good evidence for putting it with Austronesian.
9. Lee sees some evidence for register in Haroi. Ernest W. Lee (personal communication). Henderson (1965), using the term phonation-type, and Lee (1974) find evidence of register in Austronesian.

10. Pittman (1972) reports register-related effects of final consonants for Jireli, a Tibeto-Burman language of Nepal.

11. The Khmer script taking the surd/sonant distinction of the Indic scripts either applied it to its own voiceless/voiced distinction, now lost (the prevailing view), or applied it by analogy to a vocalic opposition, the precursor of the present binary vocalic system. David D. Thomas (personal communication) suggests the features [\pm voicing] and [\pm voice quality] were both present in Old Khmer.

12. There is a small class of three syllable words in Cham which are described by the formula:

$$C_2V_2C_2V_2C_1V_1(C_4)$$

It seems evident that these words, representing less than one per cent of lexical entries (apart from those usual two syllable verbs which take the productive prefix /pa-/), were more numerous historically. It does not appear that this is an unusual class, say, of loan words, but an indigenous set which once had more members. As this class is being dropped from normal speech, it is the atonic syllable (C_2V_2) or the atonic vowel alone /a/, when C_2 is /m/, which is being deleted. In the former case, the new pattern fits the normal formula for the phonological word. In the latter case, a new phonological word pattern is appearing:

$$\begin{array}{ccc}
 & C_2V_2^m.C_1V_1(C_4) & \\
 C_2V_2C_2V_2C_1V_1(C_4) & \longrightarrow & C_2V_2C_1V_1(C_4) \\
 /galaba?/ & \sim & /gaba?/ \quad 'to walk' \\
 C_2V_2C_2V_2C_1V_1(C_4) & \longrightarrow & C_2V_2^m.C_1V_1(C_4) \\
 /tamanɛə/ & \sim & /tam.nɛə/ \quad 'to dance' \\
 /samalǎn/ & \sim & /sam.lǎn/ \quad 'nine'
 \end{array}$$

Because of its rareness, this class of words will not be included in the general discussion to follow.

13. The set of [+TRA] stops has been devoiced since Proto-Chamic which had the voiceless/voiced distinction:

$$\begin{array}{ccccc}
 p & t & c & k & b & d & j & g \\
 ph & th & ch & kh & bh & dh & jh & gh
 \end{array}$$

14. The original analysis of this paper is worth summarising here. The division of [\pm TRA] and [\pm cont] was also the basis of a chart reproduced here:

	A				B			
1	p	t	c	k	b	d	j	g
	ph	th	ch	kh	bh	dh	jh	gh
	ʔb	ʔd	ʔj	ʔ				
2	s h				m	n	ɲ	ŋ
					w	l	y	r

Register A and B in Western Cham words were accounted for by the following "dominance" rules:

1. $A + A = A$
2. $B + B = B$
3. $A_1 + B_1 = \text{second element}$
4. $B_1 + A_2 = B$
5. $A + B_2 = A$

These rules (after Purtille (1969) for Khmer), not ordered with respect to each other nor within the left hand members, indicate register of tonic syllable. Quadrant A_1 and B_1 are equally strong, they both dominate A_2 and B_2 . A_2 also dominates B_2 . This analysis is based entirely on the consonant "strength". The consonant was seen to "dominate" or determine the register characteristics of the following vowel. And based on the above five "dominance" rules, certain atonic syllable initial consonants exerted their strength over an intervening tonic syllable initial to determine the registerness of the tonic syllable vowel. The present analysis in terms of the position of the tongue root provides a clearer statement of what is actually happening.

In the following examples, consonant dominance is seen acting in the combining of various syllables to form words. In the examples, a grave accent /`/ is added to indicate clearly second register.

$A_1 + B_1$	/ka/ + /bàw/ → /kabàw/	'buffalo'
$B_1 + A_1$	no examples, historically B_1 has become A_1 .	
$B_1 + A_2$	/bà/ + /hăw/ → /bàhăw/	'new'
$A_2 + B_1$	/ha/ + /dòm/ → /hadòm/	'how much'
$A_1 + B_2$	/ka/ + /rò/ → /karo/	'strong'
$B_2 + A_1$	/là/ + /kaw/ → /làkaw/	'to step over'
$A_2 + B_2$	/ha/ + /nɲŋ/ → /hanɲŋ/	'bow'
$B_2 + A_2$	/là/ + /săy/ → /làsăy/	'cooked rice'

15. Compare Javanese: normal versus lax, breathy opposition.
16. Compare Eastern Cham: lower pitch for original voiced stops.
17. Compare centering and glides in Mon and Khmer (Shorto) (Henderson).

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CLAUSE AND SENTENCE FINAL PARTICLES IN CHAM

DORIS WALKER BLOOD

0. Introduction
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0. INTRODUCTION

As in other languages of Southeast Asia,¹ final particles in Cham² play an important part in expressing the mind of the speaker as he meets different situations. Final particles are used as negatives, limitives, interrogatives, imperatives, prohibitives and emphasisers, and in calls and responses.³

Final negative and limitive particles are on the clause level, while others function on the sentence level.⁴ For example, in the following quotative sentence, two final particles occur on the clause level, one on the sentence level.

Dua urang day nao thang khik thang ka,
2 person younger sibling go house watch house first,

bloh murk kaya ba mai ðang wōk hai.
then get food bring back eat again imp.

'Do me a favour and go watch the house first, then get food and bring it back for us to eat (as before).'

ka is a final particle for the first clause (cf. 2.2), wōk for the second clause (cf. 2.6) while hai as the imperative particle refers to the entire sentence (cf. 4.6).

1. NEGATIVES

Negative particles function on the clause level. The second example in 1.2. is a medial clause in a conjunctive sentence.

1.1. In normal speech final particle ô is used to express negative.

Mư kau pôch ô. 'My father won't scold.'

Chuh mưng djuh ô. 'It is not burned with wood.'
burn with wood neg.

ka...ô expresses incomplete action, ka occurring preverbally.

Dahlăk ka hu nưk ô. 'I don't have children yet.'

Nhu ka thau khă ô. 'He doesn't know the script yet.'

di...ô intensifies negative action or thought. di occurs before the verb.

Nưk di păng amek amư ô.
child intens. listen mother father neg.
'He doesn't listen to his parents at all.'

Dahlăk di hu kanăi ô.
I intens. past remember neg.
'I certainly didn't remember.'

1.2. In formal speech, known as dôm glong 'speaking high', preverbal ôh is the usual form of negative. Most often this negative is intensified by adding final particle ô.

Hray dīt ôh thik takôi mưnưk.
day Synday neg. cut throat chicken
'Chickens are not killed on Sunday.'

Urang lıngıu ôh tamư hu dalăm thum ô.
person outside neg. go into able in shelter intens.
'An outsider is not permitted in the shelter at all.'

Di kal năn dahlăk ôh ka thau gết ô.
then I not yet know anything intens.
'In those days I didn't know anything at all.'

2. LIMITIVES

Particles which limit the action include pajσ, ka, min, ray, tra and wōk. These are final particles on the clause level.

2.1. pajσ alternates with jσ or in colloquial speech yσ. It expresses completed action or a continuing state. In questions it may occur with interrogative intonation or with ka ô (cf. 3.4). It does not occur with negatives.

Ni jσh krah-hadah kau, hσ thau pajσ.

'This is my intelligence, you know by now.'

Tapai biāk biōk-biāng jσ.

'The rabbit is really crooked (as always).'

Huāk yσ.

'Finished eating.'

2.2. ka 'first' gives the meaning of completing one action before something else is done.

Hσ bray kau chāk hσ wōk ka.

'Let me tie you up first.'

Nhu pađāl urang sahlih kan dī nhu ka.

'He ordered the people to exchange fish for him first.'

2.3. min expresses 'just, only'. It may be mildly emphatic.

Nhu birau khing likay min.

she new marry man just

'She just recently took a husband.'

Ba nao pah mach jhik wōk siam min.

take go rent machine sew again good just

'I'll go rent a sewing machine again, just as good.'

Ông năn sup mưta liwik hai birau min?

'Has he been blind for a long time or just recently?'

2.4. ray expresses the meaning of 'also, too', and often occurs with preverbal jang 'also'.

Nhu jang mai thōng dahlāk ray.

'He also went with me (too).'

Dahlāk likau đũa ơn đũa hadiup pathang ông ray.

'I beg to thank both of you also.'

djaup 'correct' may precede lay in questions that assume the answer is known. A pause precedes the question particles and djaup has a low pitch, with the usual rising intonation contour.

Hư năn M'Nhơ djaup lay? 'You are Nhơ, aren't you?'
 you are Nhơ correct ques.

Muk bãng hĩa djaup lay? 'You chew betel, don't you?'

Negative questions sometimes take this form.

Ai nao thang ô djaup lay? 'You're not going home, right?'

hu 'possible, able' may occur with lay when the speaker suspects that there may be a restricting factor.

hu lay has regular intonation of questions without a preceding pause.

Dahlăk/nao thang ai hu lay?
 I go house brother able ques.
 'Can I go to your house?'

Ông nao Phan Rang hu lay?
 'Are you going to Phan Rang?' (perhaps there is some reason why not)

3.3. hai ô 'or not' is a final interrogative phrase including the negative particle ô. This form of yes/no interrogative is less frequent than lay and carries an attitude of slight condescension on the part of the speaker.

Day Đôh hai ô? 'Do you see it or not?'

3.4. ka ô 'not yet' (cf. 1.1) as a final interrogative phrase asks a question concerning whether action is completed or not.

Ai huăk pajơ ka ô?
 brother eat already not yet
 'Have you eaten already?'

3.5. ray may be used when asking questions concerning a third person.

Anưk ông thau khăr ray? 'Does your child know the script?'
 Nhu thau chih ray? 'Does he know how to draw?'

3.6. biăk min 'really' is used as an interrogative in confirming a statement or action and is preceded by a pause. The question can be answered by a nod of the head.

Ai hmít yau năn biăk min?
brother hear like that really
'You heard that, is it true?'

Biăk day ai thi mŭk dahlăk biăk min?
really younger-older siblings will take me really
'You will really take me will you?'

3.7. biăk hai thoh 'real or not' has the same meaning as biăk min but gives the positive and negative choices to choose from. It requires a verbal answer.

Urang lach muk nao palay năn, biăk hai thoh?
'People say you went to that village, is it true or not?'
 Pô thi mŭk dahlăk biăk hai thoh?
'You will take me, really or not?'

3.8. biăk nao 'real, go' asks a question somewhat similar to American vernacular 'how come?'. The speaker may feel disgruntled or angry.

Hư dĩ păng kau ở biăk nao?
'You didn't listen to me at all, how come?'

3.9. le or ka le may be a rhetorical question marker. It is used with inferiors in reiterating something spoken once before (cf. ka in 2.2). The annoyance of the speaker may also be manifested in a posture of hands on hips.

Kau padăi hư ngăk yau năn ka le?
I order you do like that before ques.
'Didn't I already tell you to do that?'

3.10. như is an interrogative expecting an affirmative reply, but it also has the force of a friendly imperative. It occurs with some other imperative forms to soften the force of the imperative.

Mek bray anŭk nao mư-in như?
'Let me go play, O.K.?'
 Jôi bingăr jôi như!
'Don't spoil it, O.K.!'

3.11. pa is a particle which asks 'where?'. This is undoubtedly a contracted form of păk hlay 'at which?'.

Ai dok pa? 'Where do you live?'
Day chĕk ao pa? 'Where did you put the dress?'

3.12. σ is an introspective question. The speaker is asking himself whether something is true.

Bray paj σ σ ?
'(I) gave it already (didn't I?).'
Kau lach paj σ σ ?
'I said that already (I thought?).'

3.13. kach is used with content question words such as tao 'where?', gĕt 'what?', thibal 'why?'. It seems to be asking for content in a specific way.

Nao tao kach?
'Where are you going (specifically)?'
Dahlăk wăk yau hlay kach?
'How do I write it then?'

4. IMPERATIVES

Included among final imperatives are mĕk, nah, nao, dôch, hai and ô, which may be used in combination with other particles to alter the mood. These particles are on sentence level. The usual intonation pattern is a fall on the last segment. Particles having a final glottal, such as mĕk and nah, reverse the fall and have a slight rise.

4.1. mĕk is the most common imperative particle, fluctuating with ĕk in colloquial speech. This type of command is referred to as dôm băk 'speaking salty', or a forceful command.

Ai huăk mĕk! 'Eat, brother!'
Đăng mĕk! 'Be quiet!'
Dok ĕk! 'Stay!' (spoken by the person leaving)

bĕk is the more formal form of this imperative and it usually occurs in writing.

Dua ông muk huăk bĕk! 'You two eat!'

4.2. mĕk followed by another particle still carries the imperative, but the mood has been altered. These combinations are used in everyday activities of eating, going, staying, etc.

měk ka may be used when coaxing a person to do something. It is usually spoken with a lengthened down glide, and in women's speech the ka would have a velar nasal onglide.

Huăk mēk ka!

'Oh come on and eat!'

mēk yə has the rising intonation of a question but is a command encouraging someone to hurry up.

Anuk huăk mēk yə!

'Hurry and eat, child!'

mēk như serves to soften the command.

Nao thang mēk như!

'Go home O.K.!!'

mēk ah is a coaxing command used among intimates. This may be accompanied by the speaker's gesture of touching the other person to encourage him.

Huăk mēk ah!

'Come on and eat!'

mēk đa is an imperative with some uncertainty. This is apparently the same đa that indicates suspicion, and the uncertainty carries over into the command (cf. 6.1).

Nao mēk đa!

'Go ahead I suppose!'

4.3. nah is an imperative of comradeship, which normally would be glossed '*let's*'. It may occur following mēk.

Mưnay nah!

'Let's bathe!'

Nao mēk nah!

'Go with me!'

Nah pāk dēh nah!

'Let's go over there!'

4.4. The verb form nao 'go' is used as an imperative and is similar to nah.

Drah nao!

'Let's hurry!'

Dua urang dray nao mưk nhach nao!

'Let's (two of us) go get frogs!'

4.5. dôch 'to run' is also used as an imperative. It is used with inferiors or among close acquaintances and urges the other person to do something.

Nưk nao joh hla ka mek dôch!

'Go get some leaves for mother quickly!'

4.6. hai expresses an imperative of petition. It is used in asking a favour and is not limited in its use with young or old. như may occur following hai.

<u>Pato kau ngăk hai!</u>	'Show me how to do it (<u>please</u>)!'
Ai mai pagê <u>hai như!</u>	'Come early O.K.?' (<u>to help</u>)

4.7. ô is a friendly invitational particle. It may have a long falling intonation. mễk ô is used in invitations but also hurries the person.

<u>Băng boh jep ô!</u>	'Have some beans!'
Mai <u>ô!</u>	'Come in!'
Paluơ nhu <u>hai ô!</u>	'Lull him <u>for me!</u> '
Huăk <u>mễk ô!</u>	'Come and eat quickly!'

5. PROHIBITIVES

5.1. jôi as a prohibitive final particle often occurs with preverb jôi 'don't'. Final jôi is preceded by a pause and is spoken on a higher level of intonation with a rather sharp fall. ah occurring with jôi softens the command.

<u>Jôi ngăk yau năn jôi!</u>	'Don't do like that (<u>don't</u>)!'
Dì tamư dalăm ia <u>jôi!</u>	' <u>Don't</u> go in the water!'
Jôi đik <u>jôi ah!</u>	'Better not climb it!'

5.2. ka as a sentence final particle is a prohibitive in its use with lôi 'to stop' and jôi 'don't'.

<u>Lôi ka!</u>	'Stop it!'
Jôi <u>ka!</u>	'Don't do it right now!'

It can be seen here that ka carries the time factor as seen in 2.2. in addition to its function as an imperative for a negative verb. As a sentence final particle with other verbs of action it is an imperative to act now.

Huăk <u>ka!</u>	'Eat <u>right now!</u> '
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6. EMPHASISERS

Final particles which are emphatics include đa, ko, dhĩt, năn and chẻk. These are also on the sentence level.

6.1. *da* is mildly emphatic in expressing suspicion or fear on the part of the speaker.

Thau kĕk nhu <i>da</i> .	'The dog bit him <u>I suspect</u> .'
Nhu klĕk <i>da</i> .	'He stole it, <u>I'm afraid</u> .'
Lingik thi jan <i>da</i> .	'It's about to rain <u>I suspect</u> .'

min da conveys the meaning of 'perhaps'.

Nhu klĕk <i>min da</i> .	
' <u>Perhaps</u> he stole it.'	
Brūk năn nhu ngăk jŭng <i>min da</i> .	
'That work he can do <u>perhaps</u> .'	

6.2. *ko* expresses the idea of 'surely, certainly'. It also conveys the expression of 'See!' when something is being explained. With one intonation pattern *ko* has a very low pitch, is very short and has a final glottal phonetically. In other instances the intonation is a long falling contour. The particle is heard to carry a low pitch and by a non-Cham speaker it might be heard as *go*, but to the Cham ear it is a voiceless velar stop with tense register. *min ko* can also occur.

Kabao <u>băng hrŏk</u> <i>ko</i> .	'Water buffalo eat grass <u>see</u> .'
Nao pajŏ <i>ko</i> .	'Gone already <u>certainly</u> .'
Oh djaup boh kan <i>ko</i> .	' <u>Surely</u> it's not correct that those are fish eggs.'
Nhu ngăk yau năn <i>min ko</i> .	'He <u>surely</u> does like that.'

6.3. *dhĭt* 'to disappear' is emphatic assertion.

Ōng nao <i>dhĭt</i> .	'He's gone (<u>for sure</u>).'
Dahlăk ngăk biŏh <i>dhĭt</i> .	'I'm going to finish it <u>thoroughly</u> .'

6.4. *năn* 'that' occurs as a final particle as a summation of the speaker's viewing the entire situation.

Ai nao tao <i>năn</i> ?	
'Where are you going <u>there</u> ?	
Patao êu hlun tablăk nao iŏk thay dok păk lingiu paga thau groh <i>năn</i> .	
'The king called the slave to go outside to see (<u>all about</u>) who was outside the gate (making) dogs bark.'	

6.5. *chĕk* is an emphatic particle which expresses the idea of 'here and now' or 'on the spot'.

Kau ăm ka hư mưtal chěk.

I roast for you die right now

'I'm going to roast you to death on the spot.'

7. VOCATIVES

In calling lơi occurs finally with a falling intonation which may be lengthened because of distance or to get the other person's attention.

Prok lơi!

'Hey Prok!'

Ai lơi!

'Hey older brother!'

8. RESPONSES

8.1. ô kach, varying with ô kai in women's speech, is a positive response to an invitation. kach has sharply rising intonation while kai is a slow rising contour.

Huăk ô kach.

'Sure, I'll eat.'

8.2. kê is a negative response which expresses emphatic denial. This particle has falling intonation.

Dahlăk mữk kê.

'I didn't take (it).'

Bôh kê.

'Didn't see (it) at all.'

NOTES

1. David D. Thomas, *Chrau Grammar* (University of Hawaii Press, 1971) ch. 11/10, p. 179ff. M.B. Emeneau, *Studies in Vietnamese (Annamese) Grammar* (University of California Press, Berkeley and Los Angeles, 1951) ch. VII, p. 210ff. Judith M. Jacob, *Introduction to Cambodian* (Oxford University Press, 1968) Lesson 25, p. 102.
2. Cham is an Austronesian language, spoken in central Vietnam by some 40,000 speakers mainly in the provinces of Ninh Thuan and Binh Thuan. This paper reflects the dialect spoken near Phan Rang. For phonological studies in Cham see David L. Blood, 'A Problem in Cham Sonorants', *Zeitschrift für Phonetik* 15:111-14 (1962); 'Applying the Criteria of Patterning in Cham Phonology', *Van-Hoa Nguyen-San* 13:515-20 (April 1964); 'Phonological Units in Cham', *Anthropological Linguistics* 9:8/15-32 (Nov. 1967). Doris W. Blood, 'Women's Speech Characteristics in Cham', *Asian Culture* 3/139-43 (1961).
3. This analysis of final particles has been confirmed in written literature from a concordance of Cham texts made on the IBM computer of the University of Oklahoma. That project was sponsored by Grant GS-270 of the National Science Foundation.

I would like to express appreciation to Mr Thiên Sanh Cảnh for helping me to understand his language better, and to David Thomas and Richard Gieser for their helpful suggestions in writing this paper.
4. See David L. Blood, 'A Three-Dimensional Analysis of Cham Sentences', in preparation.
5. The transcription of Cham used in this paper is the current practical orthography. Of note are the symbols b, d, j, g. These symbols represent the voiceless stop series with lax register [p', t', c', k']. Lax register usually manifests itself as low pitch over the syllable or over the entire word if it occurs on the preliminary syllable. Voiced stops [b, d, dʷ] are written b, d and dj respectively.

Final -ch is [y?]; final Vup [Vw?]; final -k is /ʔ/; final -c is /k/.

6. Note the similarity to Vietnamese *lại*, which Thompson calls a postpositive contained particle, Laurence C. Thompson, *A Vietnamese Grammar* (University of Washington Press, Seattle, 1965) Appendix A, p. 349.

A THREE-DIMENSIONAL ANALYSIS OF CHAM SENTENCES

DAVID L. BLOOD

- 0. Introduction
- 1. Manifested Forms
- 2. Feature Types
- 3. Truth Value Types
- 4. Conclusion

0. INTRODUCTION

Cham¹ sentences are described here in relation to the following parameters: Manifested Form, Feature Type and Truth Value Type.² Manifested form relates to the overt form of a sentence. Feature type refers to its internal function. And truth value refers to its external function in relation to the speaker-hearer situation.

1. MANIFESTED FORMS

With respect to manifested form, sentences may be described in terms of the following basic forms: Simple, Complex, Juxtaposed, Initial-echo, Quotative, Conjunctive and Particle-marked. There may also be combinations of these basic forms, such as initial-echo-quotative. These combinations will be discussed in section 1.8.

1.1. A *simple sentence* consists of one independent clause or a less complete version of such a clause.

Nhu buch bimao ka amek nhu.³
he pluck mushroom for mother his
'He gathered mushrooms for his mother.'

Djaup.

correct

'That's right.'

1.2. A complex sentence has a clause(s) or sentence(s) embedded in the main clause, as illustrated in the sentence below:

Nhu tablăk nao iők thay urang dok păk lingiu paga.

he go-out go look who person be at outside fence

'He went out to see who was outside the fence.'

Embedded as the object of the sentence is the clause:

thay urang dok păk lingiu paga

1.3. Juxtaposed sentences may be divided into those which have two clauses, Simple-juxtaposed, and those which have three or more clauses, Multiple-juxtaposed. The clauses in a juxtaposed sentence are closely linked in a sequence of some kind, such as a temporal or consecutive action sequence, rather than by conjunctions.

(Simple-juxtaposed)

Mek mudoŋ tagôk, nao mŭk lŭthay ka anŭk huăk.

mother woke got-up get rice for child eat-rice

'The mother got up (and) went to get rice for (her) child to eat.'

(Multiple-juxtaposed)

Nhu nao hmu, tamŭ ribong, lipők mŭk hu klau dray nhach.

he go field, enter irrigation-ditch, felt-for get able 3 cl. frog

'He went to the paddy, entered the irrigation ditch (and) got three frogs with his hands.'

As shown in the examples above, simple-juxtaposed and multiple-juxtaposed sentences frequently omit the subject from the second and succeeding clauses, since the subject of the first clause most often is the understood subject of the succeeding clauses in the sentence.

1.4. Unlike some of the neighbouring languages which manifest complete echo sentences,⁴ Cham manifests only a partial echo of the preceding sentence in the first clause of the reflector sentence. The echo clause contains a main verb or synonym of a main verb from the preceding sentence.

Sanŭng yau năn, tapai klao tha dray.

think like that rabbit laugh one self

'Thinking that way, the rabbit laughed to himself.'

The initial echo in this sentence repeats the sanŭng 'thinking' of the

rabbit in the sentence before.

1.5. A *quotative sentence* differs from other complex sentences in that it contains either a *direct* or an *indirect quotation* (see section 2 on Feature Types), and is introduced by a quotative clause.

Direct-Quotative Sentence:

Abao dôm thõng tapal lach: "Dahlăk jang nao mư-in yau al ray."
snail spoke with rabbit say I also go play like older-sibling too
'The snail spoke to the rabbit, saying: "I'm also having fun like you are."'

Indirect-Quotative Sentence:

Nhu pathau lach brūk năn nhu ngăk bloh pajø.
he politely say work that he do finish already
'He politely stated that he had completed that work already.'

A direct quotation may contain any manifesting sentence form, including both direct and indirect quotations. This is because, in a direct-quotative sentence, the quotation introducing clause is not bound to the quotation, even though the quotation acts as the object of the introductory clause. In an indirect-quotative sentence the quotation is embedded in the quotation introducing clause. Thus it cannot function as a distinct discourse in itself, as the quotation in a direct-quotative sentence can.

The main distinction prosodically is that in a direct-quotative sentence there is an obligatory pause (or juncture) before the quotation, and in an indirect-quotative sentence there is not an obligatory pause before the indirect quotation.

1.6. A *conjunctive sentence*⁵ is: 1) one which is related to a preceding sentence by an *initial conjunction*, or a sentence consisting of clauses which are related to each other by a sentence-initial conjunction; 2) a sentence consisting of two or more clauses, two of which are connected by a *medial conjunction*; or 3) a sentence combining both *initial* and *medial* conjunctions.

1) **Initial conjunctions** include:

a. those which relate a sentence to a preceding sentence:

min 'but'
bloh 'then'

The following conjunctive expressions may also act as paragraph introducers:

bloh dĩ năn	'finally, after that'
dôm năn	'therefore, so'
birau mừng	'just then, then'
jưng mừng	'so then, then'
năn ka mừng	'so, therefore, consequently'
kayua yau năn	'because of that'

Dôm năn patao ginong, nao mữk urang năn.

therefore king angry so get person that

'So the king was angry (and) went to seize that person.'

b. those which relate clauses within a sentence to each other:

muyah ~ yah	'if, since'
kal	'when'
tãi	'when, arriving (at that point)'
kayua ~ yua	'because'

Tãi urang mữk kan mal, urang ðôh boh ok rliô.

when persons get fish come they see many mangoes

'When the fishermen returned they saw many mangoes.'

tãi relates the first clause to the second clause of the above sentence.

2) Medial conjunctions include:

a. conjunctions that may fill either the sentence-medial or sentence-initial slots:

min	'but'
bloh	'then'
bloh dĩ năn	'after that'
muyah ~ yah	'if, since'
kayua ~ yua	'because'

Yaup hray tapal nao munhum la, min tũk hlay jang ðôh bao.

each day rabbit go drink water but hour which also saw snail

'Every day the rabbit went to drink water, but each time (he) also saw the snail.'

b. conjunctions that may fill the sentence-medial slot only:

ngăn	'or'
hai ~ hai lach	'or'
mưng	'then'
thống	'and'
nặng	'then'
sặng	'then'

Kau mai mưnhum ia thōng rah mư-in.

I come drink water and go-around play

'I came to drink water and have some fun.'

3) Initial and medial conjunctions may co-occur in the same sentence. Combinations that have been observed in text material are: mưyah - bloh ~ mưyah - nặn 'if - then' and min - yua 'but - because'.

Mưyah dray dih tha panYk, bloh dôch tui, jang klak nhu ray.

if self sleep one nap then run follow also leave him also

'If I take a nap, then run after (him), I'll still leave him behind.'

1.7. Particle-marked sentences include: 1) those that are clause-based (see sections 5.2 and 5.3, interrogative and imperative truth values); 2) those that are phrase or word-based (see section 5.4, exclamatory truth value, vocatives); and 3) those that are particle-based (see section 5.4, expletives). A clause-based sentence has a full clause as its main element, a phrase- or word-based sentence has only a phrase or word as its main element, and in a particle-based sentence the particle itself is the main element.

1) Clause-based:

Nhu ngăk yau năn/djaup lay?⁶ (Interrogative)

he do like that correct ques.

'Is it correct that he did that?'

Dua urang dray nao nao! (Imperative)

2 person self go imp.

'Let's the two of us go!'

The main distinction between the form of the interrogative and imperative sentences is to be found in the prosodic features, especially on the final particles. Imperative nao receives a noticeably heavier stress than interrogative djaup lay. Also, the intonation contour for nao is falling. The intonation contour of djaup lay is rising and it is preceded by a pause.

2) Phrase or word-based:

Oi ai mưnưs! (Pre-base vocative)

hey older-sibling human-being

'Hey you!'

Aday loi! (Post-base vocative)

younger-sibling hey

'Hey brother!'

3) Particle-based:

- Ih! 'exclamation of disgust'
 Ah! 'exclamation of mild surprise'
 Us! 'exclamation of surprise'

1.8. Combination of forms that may be manifested include:

1) Combinations of clause-based types, such as this *Initial-echo-Quotative* sentence:

Tapai bôh yau năn, tang! bao lach: "Ngăk gět?"
rabbit see like that ask snail say do what
'The rabbit seeing that, asked the snail, "What are (you) doing?"'

2) Combinations of clause-based types with conjunction-based types, such as this *Initial-conjunction-Complex* sentence:

Dôm năn patao bray ka J'Bong Lah khing anuk patao.
so king give for Bong Lah marry child king
'So the king gave Bong Lah permission to marry his daughter.'

Other combinations of clause-based types with conjunction-based types that have been observed are: *Initial-echo-Medial-conjunctive*, *Initial-conjunctive-Simple-juxtaposed*, *Initial-conjunctive-Quotative*, *Medial-conjunctive-Multiple-juxtaposed*, *Medial-conjunctive-Quotative*.

2. FEATURE TYPES

The second parameter by which sentences are described refers to the internal lexico-semantic function of a sentence. Feature types in Cham sentences include: Conditional, Contrary to expectation, Causal, Action sequence, Coordinate, Topic-Comment, Quotative and Neutral.

2.1. *Conditional* sentences include: simple-conditional, concessive-conditional, motivation-proposition conditional, temporal-emphasis conditional and iterative-conditional.

1) A *simple-conditional* sentence consists of a clause that states a condition to be met and a second clause that states the expected action, based on the fulfillment of the condition. The conditional clause may be introduced by *muyah* 'if', *ka* 'when', or another general or specific temporal, providing completed action is not indicated. The second clause may be optionally linked to the first clause by a medial conjunction such as *bloh*, *năn*, or *săng* 'then'. In this type of conditional sentence, the clauses are reversible. However, the first sentence shown below is the usual order:

Muyah hư tong kau năn kau tong hư wők.
if you beat me then I beat you again
'If you hit me, then I'll hit you back.'

Kau tong hư, muyah hư tong kau.
I beat you if you beat me
'I'll hit you, if you hit me.'

2) A concessive-conditional sentence consists of a clause (or two) that states the situation or condition, *in spite of which* the anticipated action of the next clause is expected to take place. The first clause is introduced by muyah 'if, though' and the last clause contains jang 'also' in pre-verb position. The clause order is fixed.

Muyah dray ngāk patao, jang ôh bui-be di gět.
if self do king also not happy at what
'Even though I reign as king, (I) still won't be happy at all.'

Muyah dray đih tha panĭk, bloh dôch tui nhu, jang klak nhu ray.
though self sleep one nap then run follow him also leave him too
'Even though I take a nap (and) then run after him, (I'll) still leave him behind.'

In the second example, ray 'too' is an optional sentence-final particle that goes along with jang. The conjunction bloh 'then' relates the first two clauses into a temporal sequence.

3) A motivation-proposition conditional sentence consists of a clause that states the situation providing the motivation for the proposed action of the second clause. The motivation clause may be introduced by muyah 'if, since' or by a non-past specific temporal, such as urāk ni 'now', hray ni 'today', or hray paguh 'tomorrow'. The proposition clause may also be introduced by a non-past specific temporal expression. The clause order may be reversed, but the usual order is for the motivation clause to be followed by the proposition clause.

Muyah ai tapai lach yau năn, urāk ni dahlăk thōng
since older sib. rabbit say like that now I and

ai padăng gaup dôch lők.
you challenge together run look

'Since you, rabbit, said that, now let's challenge each other to run and see.'

Urāk ni J'Bong Alah glnrôh lô, ưng khing nhu mək.

now Bong Alah powerful very agree marry him imp.

'Now Bong Alah is very powerful, agree to marry him!'

4) A *temporal-emphasis conditional* sentence consists of a clause stating a *prior* condition, followed by a clause stating *anticipated* action in response to the condition being met. The time order of '*first...then*' is in focus. The first clause contains *ka* '*first*' and the second is introduced by *mung* '*then*'. A variant of this type has *dahlau* '*before*' in the conditional clause and *haday* '*after, later*' in the anticipated response clause. Clause order is fixed.

Hư tong kau ka, mung kau tong hư wők.
you beat me first then I beat you again
'You hit me first, then I'll hit you back.'

Hư tong kau dahlau, kau tong hư haday.
you beat me before I beat you after
'You hit me beforehand, I'll hit you afterward.'

5) An *iterative-conditional* sentence consists of a statement, in the first clause, that each time a certain condition is met, a corresponding action, stated in the second clause, will be taken. The first clause is introduced by an iterative expression, such as, *yaup bǎng* '*each instance*'. The second clause may include initial *jang* '*also*' and final *wők* '*again*'. The clause order is fixed.

Yaup bǎng hư tong kau, jang kau tong hư wők.
each time you beat me also I beat you again
'Everytime you hit me, I'll also hit you back.'

2.2. A *contrary-to-expectation* sentence consists of a clause, stating a situation or action (thesis), followed by a clause that states unexpected or adverse factors (antithesis) in relation to the first clause. The second clause is introduced by *min* '*but*', and the clause order is fixed.

Yaup hray tapai nao mưnhum la, min wal hlay jang ðoh bao ray.
each day rabbit go drink water but part when also see snail too
'Every day the rabbit went to drink water, but no matter what part of the day he also saw a snail.'

2.3. *Causal* sentences include: simple-causative, cause-effect and purposive.

1) A *simple-causative* sentence consists of a clause, which states a situation or action, followed by a clause which states the cause of the situation or action. The causative clause, usually the second one, is introduced by *kayua ~ yua* '*because*'. Reversing the order of the clauses is acceptable, but infrequent.

Mrək glong tapa wők, kayua jru năn siam lõ.
pepper tall pass again because medicine that good very
'The pepper plant was even taller, because that medicine was very good.'

2) In a *cause-effect* sentence, the action or situation of the first clause serves as the basis for the action of the succeeding clause. Generally, a *cause-effect* sentence consists of two juxtaposed clauses, but it may have more than one cause clause, followed by one or more effect clauses.

Mek nhu sět, tayah danung-munhim.
mother his jump wreck apparatus weaving
'His mother jumped, wrecking the weaving apparatus.'

A variation of this type is the *anticipated cause-effect* sentence, in which the anticipated cause and effect clauses may be linked, in that order, with the conjunction năn 'then'.

Ông padāl ngāk năn urang ngāk.
Mr tell do then person do
'You tell (someone) to do (something) (and) he'll do it.'

3) A *purposive* sentence generally consists of a clause predicating some kind of action, followed by another clause which gives the purpose of the action. The purpose clause is introduced by ka 'for' or piơh 'in order to'. The purpose clause subject and predicate are obligatory with ka, but with piơh only the predicate is obligatory.

Nhu bray tha boh ok ka day nhu đặng.
he give one cl. mango for sibling his eat
'He gave a mango to his younger brother to eat.'

Nhu joh ginrong rơng piơh parui aday kamay nhu.
he break-off pincher crab in order to tease younger sister his
'He broke off a pincher of the crab to tease his younger sister with.'

2.4. *Action sequence* sentences include: consecutive-action, temporal sequence, subsequent-action, and resultant-action.

1) A *consecutive-action* sentence consists of two or more juxtaposed clauses, with the action sequence proceeding from left to right.

Patao dăng, đik yun, nao thang.
king stand climb hammock go house
'The king stood up, climbed into the travelling hammock (and) went home.'

2) In a *temporal sequence* sentence, the action also proceeds from left to right, but in this case the time sequence is in focus. The chronological progression may be indicated by a temporal conjunction, such as *tāl* 'when', to introduce the first clause, or *bloh* 'then', to introduce the second clause.

Tāl thang, nhu Đôh mek dok munhlm akhăn.

arrive house he see mother be weaving cloth

'Upon arriving home, he saw (his) mother weaving cloth.'

Dua urang pathăt-padôk gaup, *bloh* pagôn hray tūk.

two person argue debate together then agree day hour

'The two of them argued together, finally agreeing on the day and hour.'

3) A *subsequent action* sentence consists of an initial clause, which echoes the action of the preceding sentence, followed by another clause, which predicates the subsequent action. The clauses are ordinarily juxtaposed.

Sanung yau năn, tapal klao tha dray.

think like that rabbit laugh one self

'Thinking like that, the rabbit laughed to himself.'

4) A *resultant action* sentence presents a sequence of action resulting from previous action. It is introduced by a conjunctive expression, such as *dôm năn* 'so, therefore', and consists of at least two juxtaposed clauses.

Dôm năn patao ginong di tian, mŭk mek nhu karōk wōk.

so king angry in stomach, get mother his shut-up again

'So the king was angry, seized his mother and shut her up.'

2.5. *Coordinate sentences* include: positive, negative and alternative-coordinate sentences.

1) A *positive-coordinate* sentence consists of two clauses connected by *thōng* 'and' or simply juxtaposed. The predications supplement each other in a coordinate relationship.

Khol dahlăk pajum urang kathot *thōng* dōng urang riđah-riđup.

we help person poor and rescue person wretched

'We help those who are poor and rescue those who are wretched.'

2) A *negative-coordinate* sentence consists of two clauses connected by *thōng* 'and', *ngăn* 'or', *hai* 'or', *hai lach* 'or', or simply juxtaposed. The predications supplement each other in an additive relationship, but

must also contain negatives ôh (preverb) and ô (clause final), if thǒng or zero connects the clauses.

Dahlăk ôh yeh dray thǒng pagăp bok mưta urang ô.

I not boast self and compare cheek eye person neg.

'I don't boast about myself and don't compare my attributes with someone else.'

If ngăn, hai or hai lach 'or' connect the clauses, then the preverb negative ôh is used in the first clause only. Clause final ô 'not' is not ordinarily used, since the sense of ngăn, in this case, is 'nor'.

Dahlăk ôh yeh dray ngăn pagăp bok mưta urang.

I not boast self or compare cheek eye person

'I neither boast of myself nor compare myself with another.'

In place of negatives, the prohibitive jôi 'don't' may be used in a variation of the negative additive sentence type. In this case also, the two clauses may be connected by ngăn, hai, hai lach or thǒng. In this construction ngăn, hai, hai lach convey the additive sense of 'and' rather than alternative 'or'.

Jôi yeh dray ngăn pagăp bok mưta urang jôi!

don't boast self or compare cheek eye person don't

'Don't boast about yourself and don't compare yourself with another!'

3) An alternative-coordinate sentence ordinarily consists of two clauses obligatorily connected by ngăn, hai, hai lach 'or'. In this type of sentence the predication of one clause stands as an alternative to the predication of the other clause. This use of ngăn, hai, hai lach contrasts with that of the negative coordinate sentence, where the sense of these conjunctions is 'and'.

Hray paguh dahlăk nao thang hai nao tom ông năn.

day tomorrow I go house or go gather-with man that

'Tomorrow I'll go home or go to meet with that man.'

2.6. In a topic-comment sentence, the first phrase or clause presents the topic under consideration and the second phrase or clause comments on or describes some aspect of it. The two phrases or clauses may be juxtaposed or may be linked by năn 'to be'. In the latter case, năn functions as the main verb of the simple or complex sentence.

Ông năn năn urang tôi.

mister that to be person guest

'That gentleman is a guest.'

Patao taluch ngāk nān ôh djaup patao biāk ô.
king Taluch do to-be not correct king real no
'King Taluch's reigning was not really (that of) the true king.'

2.7. *Quotative sentences* include: direct quotation and indirect quotation.

1) A *direct-quotation* sentence consists of a quotation introducing clause followed by a verbatim quotation. The quotation acts as the object of the introductory clause, and it may vary in length from one word up to a long discourse.

A quotation, which introduces a new speaker with a new viewpoint, is considered to constitute a new paragraph in itself. Other direct-quotation sentences are considered to be on the sentence level, even though they may have a number of sentences acting as the object of the quotation-introducing clause.

Direct-quotation sentences include: a) those addressed to another person, b) those that are self-addressed, c) incantations of magic formulas, d) those with no specific address, e) included quotes.

a) Quotations *addressed to another person* or persons are by far the most frequent:

Ai kachua lach thōng day: "Lôl ka ai dok pāk nl."
sibling oldest say with sibling-younger leave for me stay at this
'The oldest brother said to a younger brother: "Let me stay here."'

The above type of quotation may contain references to *first*, *second* or *third* persons, without restrictions. Although no overt referent is obligatory, at least one referent is always implied and easily reinstated from the context.

In the quotation introducing clause the speaker is almost always specifically designated and the addressee is either designated or clearly implied from context. Predicates in this clause include: *lach* 'to say', *dôm* 'to speak', *tangi* 'to ask', and the combinations *dôm lach* 'to speak saying' and *tangi lach* 'to ask saying'.

b) Quotations that are *self-addressed* contain only *first* and *third* person referents. This distinguishes them from quotations addressed to others.

Dalām tian tapai sanung lach: "Dray klak nhu."
in stomach rabbit think say self abandon him
'The rabbit thought to himself: "I'll leave him behind."'

In the quotation introducing clause, the speaker and the addressee

are the same individual. The speaker is clearly designated or implied from context. The most common predicate for the introductory clause is *sanung lach* 'to think saying'. The reflexive may be further indicated by an expression such as *dalām tian* 'in stomach' or *dalām hatai* 'in liver'.

c) *Incantations* of magic words are fixed formulas that are not altered to fit the usual sex, age and kinship requirements, although they may appear in elliptical form when related by a story-teller. The speaker is usually specifically designated, but may also be implied. No specific addressee is required, but the context makes it clear who the message is intended for.

Nhu *pôch thunau lach*: "*Ông tām-sēt*."

he read magic say grandfather enter-jump

'*He incanted the magic words saying: "Mister begin jumping."*'

The context of the above sentence indicated that the speaker incanted these words to make his mother jump. Later in the same text, he made the king and his officers jump by using the same words.

Specialised predicates, such as *pôch thunau lach* 'read magic saying', are used in the quotation introducing clause, but the general predicate *lach* may also be used.

d) In *non-specific-address quotations*, the referents are *first* and *third* persons only, although the words may be intended for a hearer who is present. The speaker may be specifically designated or may be an indefinite "voice".

Dalām patau năn hu săp êu prông lach: "*Munus hlay ngăk dhăr hai*."

in rock that have sound call big say human-being who do favour imp.

'*In that rock there was a voice calling loudly saying: "Someone please do (me) a good turn."*'

e) A *direct-quotation sentence* may include any other sentence type, including a *direct quotation*. When such a quotation is included, the speaker of the main quotation designates or implies the speaker of the second quote. Thus, for the subject of the included quotation-introducing clause, *first*, *second* or *third* person may be used.

Ông *bhut lach*: "*Dahlăk likau đai tha thunau ginrôh lach*:"

Mr ghost say I beg bestow one magic powerful say

"*Ông tām-sēt*" *năn urang sēt*."

Mr enter-jump to-be person jump

'*The ghost said: "Please let me give you a powerful magic, (you) say: "Mister jump!" and the person will jump."*'

2) An *indirect quotation* sentence consists of a quotation introducing clause and a summarised quotation.

Nhu lach ok nhu pěk min.

he say mango he pick only

'He said that he had picked the mangoes.'

In contrast to a direct quotation sentence, which frequently constitutes a paragraph in itself, an indirect quotation sentence generally does not. This is because the nature of an indirect quotation is to give only the gist of a quote rather than a word-for-word rehearsal.

Another distinguishing feature of an indirect quotation sentence is that both in the introductory clause and the indirect quote, the speaker is referred to in the same person.

2.8. A *neutral sentence* is distinguished from other types of sentences by the absence of any specific lexico-semantic feature. The neutral feature type includes cooccurrence with the following manifested forms:

1. *Clause-based sentences: simple and complex*

Tapai chiup alah di abao.

(simple-neutral)

rabbit suffer lose to snail

'The rabbit lost to the snail.'

Tapai hmĭt sǎp abao ka uk anǎk.

(complex-neutral)

rabbit hear sound snail call out ahead

'The rabbit heard the sound of the snail calling out ahead.'

2. *Particle-based sentences: initial, initial and final, and final-particle*

(Initial-particle-Neutral)

Biǎk mek ôh mŭk liithay ka dahlǎk?

really mother not get cooked-rice for me

'Mother, you're really not going to get rice for me?'

(Initial and Final-particle-Neutral)

Biǎk day ai thi mŭk dahlǎk biǎk min?

really siblings about to get me really just

'You're really about to get me sure enough?'

(Final-particle-Neutral)

Lôi day ai dahlǎk bĕk!

leave younger-older siblings I imp.


'Leave us alone!'

3. TRUTH VALUE TYPES

The *truth value* of a sentence is its external function, relating the sentence to the speaker-hearer situation. The two most effective indicators of truth value are sentence intonation and sentence particles. Cham sentences include the following truth value types: declarative, interrogative, imperative and exclamatory.

3.1. The function of *declarative truth value* is to predicate a statement. This truth value is manifested primarily by the intonation which the sentence bears. Particles do not indicate this truth value. It has the widest distribution of any truth value. It may cooccur with any feature type and with all manifested forms, except those which are particle-marked.

Intonation for declarative sentences depends upon its distribution. For example, a string of declarative sentences in a narrative may have slightly rising intonation on the last word of each non-final sentence, while the final sentence in such a series will have falling intonation on the last word. A declarative sentence in isolation has falling intonation on the sentence-final word.




 Nhu bray boh ok ka urang.
he give cl. mango to person
'He gave the mangoes to the people.'

3.2. An *interrogative sentence* poses a question. *Interrogative truth value* may be manifested by 1) question intonation alone or by question intonation with question words in the sentence nucleus, or 2) by question intonation with interrogative particles.

The context may further indicate whether an answer is really expected or whether the question form has been retained and the truth value has been changed (see section 3.5 on truth value switching).

1) A *sentence nucleus* may manifest interrogative truth value by intonation alone or by the use of content question words in the nucleus along with question intonation.

a) Below is an example of contrast between a sentence-nucleus interrogative and a declarative sentence, solely on the basis of intonation:

	
Huāk pajɔ?	Huāk pajɔ.
<i>eat-rice already</i>	<i>eat-rice already</i>
<i>'Have (you) eaten already?'</i>	<i>'(I've) eaten already.'</i>

The rising intonation on pajɔ (at the left) signals a question. This

contrasts with the falling intonation on pajə in the declarative statement (on the right).

b) Sentence-nucleus interrogatives include the following *content question words*, which require appropriate content responses:

gēt 'what', thay 'who', thibāl 'why, how', yau hlay 'how', tao 'where', pāk hlay 'where, what place', biēn 'when', tūk hlay 'when, what hour', urang hlay 'who, which person', dôm 'how many, how much'.

Hư dok ngāk gēt pāk nī/bao?

you be do what at here snail

'What are you doing here, snail?'

2) Interrogative truth value may also be manifested by intonation along with *interrogative particles*,⁷ which include those listed below. These particles are usually accompanied by rising intonation on the final particle or on the final syllable, if the particle is not sentence-final.

General interrogative particles:

lay 'huh?', djaup lay 'correct?', hu lay 'possible?', ray (about a third person).

Specific interrogative particles:

hai 'or', hai ô 'or not' (alternative)

ka ô (incompleteness)

biāk 'really', biāk min 'really' (doubt)

biāk nao 'how come' (reason)

Ông nao puh lay?

mister go field huh

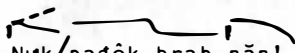
'Are you going to (your) field?'

3.3. *Imperative truth value* functions in a sentence to express a command, request or exhortation of some kind, which may vary in force and purpose. This truth value may be manifested 1) by *prosodic features* alone, especially *stress* and *intonation*. Or, along with these prosodic features it may be manifested 2) by *imperative words* in a sentence nucleus, 3) by *imperative particles*, or 4) by a combination of *imperative words* in the sentence nucleus and *imperative particles*.

Ordinarily, the final syllable of an imperative sentence will be heavily stressed and the intonation will be falling. However, final words and particles ending in either glottal stop or h, have a slightly rising intonation. A final syllable may sometimes be lengthened for emphasis.

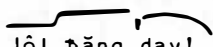
Imperative truth value is limited almost exclusively to direct address situations. So, in text material, imperatives are invariably found only in direct or indirect quotations.

- 1) Imperative truth value manifested by *prosodic features* alone:




 Nuk/padôk brah năn!
child catch milled-rice that
 'Child, catch that rice!'

In this type of imperative, the subject (addressee) may have either rising or falling intonation, optionally followed by pause. The stress on the subject and final word will be about equally heavy. There will usually be falling intonation on the last word or syllable.

- 2) Imperative truth value manifested by *imperative words* in the sentence nucleus, along with prosodic features. In this type of imperative, the subject will often be omitted. The usual pattern of heavy stress and falling intonation on the final word is manifested.


 Jôi Dăng day!
don't eat younger-sibling
 'Don't eat (it), brother!'


Below is an imperative often heard in a Cham village. It takes the intonation contour for final words ending in glottal sounds.

 gôk!  Gôk!
go-up go-up
 'Scram! Scram!'

This word has become a specialised imperative word, usually used by an adult with children. In this scolding type of imperative, the intonation contour is slightly rising, with a repetition of the order having both higher pitch and heavier stress than the first utterance.


- 3) Imperative truth value manifested by *imperative particles*, along with prosodic features. These particles include:

măk ~ bək ~ ěk (*positive forceful imperative*)
 jôi (*negative forceful imperative*)
 nah, nao (*imperative of comradeship*)
 hal (*imperative of petition*)
 ô (*friendly imperative*)
 dôch 'run' (*to inferiors or close acquaintances*)



 Nao thang mễk!
 go house imp.
 'Go home!'

Imperatives may be tempered or modified when combined with other particles:


mễk kai (*coaxing imperative*)
 mễk yơ (*hurrying imperative*)
 mễk như (*softened imperative*)
 mễk ah (*coaxing imperative among close acquaintances*)
 mễk đa (*uncertain imperative*)


 Day nao mễk đa!
 younger-sib. go imp.
 'Go (I suppose)!'

All of the above particles are sentence-final with the usual falling intonation, except yơ and như. yơ and như have the rising intonation of a question and their effect is to temper the forceful imperative mễk.


 Nao mễk yơ!
 go imp.
 'Go on!'

4) Imperative truth value manifested by a combination of *imperative words* in a sentence nucleus and *imperative particles*, along with prosodic features:


 'Jôi/ngăk yau năn/jôi!
 don't do like that imp.
 'Don't do that!'

3.4. *Exclamatory truth value* functions in a sentence to express a sudden, forceful or colourful utterance, with an emotion of some kind generally being in focus. This truth value is found most often in direct address situations. It is manifested 1) by various *intonation* and *stress* combinations or 2) by *exclamatory particles*, along with prosodic features.

Exclamatory truth value is manifested in: calls of address; emphatic assertions or denials; and expressions indicating surprise, annoyance, anger, glee, sorrow, disgust, etc.

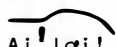
Some exclamations, such as vocatives and expletives, function on the paragraph level to add colour to the discourse. Other exclamations,

such as those expressing emphatic assertion or denial, often function on the sentence level.


- 1) Exclamatory truth value manifested by *intonation* and *stress* alone:

 Pāk 'ni! <i>at here</i> <i>'Here!'</i>	 Ghoh 'lô! <i>skilful very</i> <i>'Very skilful!'</i>
---	---

- 2) Exclamatory truth value manifested by *exclamatory particles*, along with prosodic features:

 Ai 'lô! <i>older-brother hey</i> <i>'Hey, brother!'</i>	(Vocative)
--	------------

 'Us! <i>exclamation of surprise</i>	(Expletive)
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 Kau pēk 'mīn! <i>I picked only</i> <i>'I indeed picked them!'</i>	(Emphatic assertion)
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3.5. TRUTH VALUE SWITCHING (Rhetorical Questions)

The combination of prosodic features, manifested form and feature type that a sentence has will ordinarily indicate its corresponding truth value. However, a speaker may choose a set that would usually go with one truth value, while actually having a different truth value in mind.

This type of metaphorical switching of truth value is shown by the following rhetorical question, given in its context:

Nhu lach wōk: "Biāk/day ai thi mŭk dahlāk/biāk mīn?
he say again really siblings will seize me really indeed

Muyah day ai thi mŭk dahlāk, bloh mŭk." Dôm năn ðuah thunau:
if siblings will seize me, then seize then incant magic

"Ông tām-sēt."

Mr begin jump

'He said again: "Really, you're about to seize me, really indeed?
If you're about to seize me, then seize (me)." Then (he) incanted
the magic (words): "Mister begin to jump."

The first sentence of the quotation question has initial and final

particles, along with interrogative intonation (rising intonation). Also, *biāk* initially is followed by a brief pause and final *biāk min* is preceded by a brief pause. Ordinarily, this would be sufficient evidence to say that this sentence has interrogative truth value.

However, the context indicates that although the question form was spoken, no answer was expected. The speaker did not give opportunity for the hearers to reply, but continued to speak and then incanted the magic words, which made his hearers powerless to capture him. So the truth value intended is declarative rather than interrogative.

Although a rhetorical question is the most common example of metaphorical switching of truth value, others may be possible.

4. CONCLUSION

In this type of sentence analysis, the distinctness of form and function is maintained, and then related. Thus, this approach avoids the confusion of mixing form and function before each parameter has been fully pursued. It also avoids the incompleteness of describing sentences on the basis of form only or function only.

A more exhaustive study of this type would include under sentence-form: *Completeness Variants* and *Prosodic Features*.

Completeness variants would include descriptions of sentences that are full, extra full, elliptical and incomplete.

Of special interest are extra-full or parenthetical sentences, which may function either on the paragraph level or the sentence level.

Below is an example of the latter:

Taluch ngāk patao (patao taluch ngāk năn ôh
Taluch do king king Taluch do to be not

djaup patao biāk ô), mîn graup krah-pakai binrōng
correct king real neg but plural wise-men officers

lu hnūk ôh thau thay patao biāk, thay patao mư-in ô.
left right not know who king real who king play neg.

'Taluch reigned as king (King Taluch's reigning was not really that of the true king), but the wise men and officers on the left and right didn't know who the true king was and who the false king was.'

This would be summarised as a *Conjunctive - Extra-Full - Contrary-to-Expectation - Declarative Sentence*. The parenthetical sentence immediately follows and explains the object *patao 'king'* of the first clause of the main sentence. The parenthetical sentence would be described as a *Complex - Full - Topic-Comment - Declarative sentence*.

Included under *prosodic features* of sentences would be: intonation, stress and juncture.

From this type of analysis, sentence batteries may be determined and sentence battery trees constructed, by means of plotting the co-occurrences of feature types with manifested forms and feature types with truth value types.

NOTES

1. Cham is an Austronesian (or Malayo-polynesian) language of Southeast Asia. See Doris W. Blood, 'Reflexes of Proto-Malayo-Polynesian in Cham', *Anthropological Linguistics* vol. 4, 9:11-20 (1962). See also Ernest W. Lee, 'Proto-Chamic Phonologic Word and Vocabulary' (unpublished doctoral dissertation, Indiana University, September 1966). E. Aymonier and A. Cabaton in their *Dictionnaire Ćam-Français* (Paris, 1906) also mentioned the largely Malayo-Polynesian vocabulary of Cham (p. vii).

The dialect on which this study is based is spoken by about 40,000 Cham people, mainly in Ninh-Thuận and Binh-Thuận provinces of central South Vietnam. More specifically, it is based on the speech of Mr Thiên Sanh Cảnh, who lives in the hamlet of Hữu-Đức in Ninh-Thuận province. He is about 55 years of age and has been a public elementary school teacher for over thirty years. He is also a respected teacher of teachers, since he has a thorough knowledge of the Cham script (of Sanskrit origin) and writings, as well as the customs and folklore of his people. I am very grateful for his valuable and patient assistance in my study of the Cham language.

2. The idea of describing a sentence in relation to its several form and function parameters is the brainchild of David D. Thomas. See his *Chrau Grammar*, Oceanic Linguistics Special Publication No. 7 (University of Hawaii Press 1971), especially chapter 11, Sentences and 12, Paragraphs and Discourses.

In personal conversation with Dr Thomas, he suggested the following parameters for describing the sentences of a language:

- | | |
|--------------------------|------------------------------|
| 1. Manifested Forms | } in relation to <i>form</i> |
| 2. Completeness Variants | |
| 3. Prosodic Features | |

4. Feature Types
5. Truth Value Types } in relation to *function*

For the present study, Cham sentences will be described in relation to the *first*, *fourth* and *fifth* parameters only. However, prosodic features will be referred to, especially in section 3, Truth Value Types. Also, completeness variants will be mentioned in section 4, Conclusion.

For one definition of "sentences", which is appropriate for this type of description, see Thomas' definition of a sentence in Chrau (Chrau Grammar, p. 167).

I would like to thank Dr Thomas and Richard Geiser for their helpful suggestions in preparing this paper.

3. For a description of Cham phonemes see David L. Blood, 'Phonological Units in Cham', *Anthropological Linguistics* 9:8/15-32 (Nov. 1967). The orthography used in this paper represents the current romanisation used in Cham instructional materials prepared for use in elementary schools in Ninh-Thuan and Binh-Thuan provinces. It is as follows:

Consonants (Main Position)					
Tense Vcl.	p	t	ch	k	- (medial glottal stop)
Lax Vcl.	b	d	j	g	[p', t', č', k']
Voiced	ɸ	ɖ	dj		[b, d, dy]
		s		h	
	m	n	nh	ng	[m, n, ñ, ŋ]
	w	l, r	y		
	u		i		(preglottalised w and y)

All tense and lax voiceless oral stops may be aspirated. Lax voiceless stops are generally associated with low syllable or word pitch. Tense voiceless stops are generally associated with non-low pitch.

Consonants (Final Position)

-p	-t	-ch	-c	-k
-up				
	-s			-h
-m	-n		-ng	
-u	-l, -r	-y		
-o		-i		

Phonetic equivalents, for final consonants ch, c, k, up and s, are: [yʔ], [k], [ʔ], [wʔ] and [yh]. Phonetic equivalents, for short and

long a, respectively, before final semivowels, are: au[ăw], ao[aw], ay[ăy], ai[ay], and for vowels other than a before final semivowels: Vu[vw] and Vi[vy].

Vowels (long and short)

i	ĩ	u	ũ	u	ũ
ê		σ	õ	ô	
e	ẽ	a	ã	o	õ

One contrasting set of long and short ô has been found: bôn 'book' (a borrowing from Chinese) and bôn [bôn]. But since the functional load of distinguishing between /o/ and /õ/ is very low, in the current practical orthography, every occurrence of these two phonemes is written ô.

Vowel Sequences

iσ [yəviə] uσ [wəvuə] in open syllables, before h.
iê [iə] uô [uə] elsewhere.

4. Thomas, *Chrau Grammar*, pages 169 and 170.

5. Evidence from a concordance of written Cham texts corroborates the sentence analysis presented in this paper. The concordance was produced by IBM computer at the University of Oklahoma. This computer project was sponsored by Grant GS-270 of the National Science Foundation.

6. Where sentence intonation and stress are used in describing sentences, sentence stress is indicated phonetically, ['], before the stressed syllable. If this contrasts with a heavier stress, the heavier stress is indicated in this way, ["]. The phonetic intonation contour of a sentence is indicated with a line above the sentence. Phonetic sentence-medial pause (of juncture) is indicated with a slanted line, /. Extensive use of these symbols for prosodic features is made in section 3, Truth Value Types.

7. See Doris W. Blood, 'Clause and Sentence-Final Particles in Cham' (unpublished manuscript, April 1971).

CHRU PHONEMES

EUGENE FULLER

0. Introduction¹
1. Phonological Word
2. Consonants
3. Consonant Distribution
4. Vowels
5. Vowel Distribution
6. Note on a Prosodic Feature

0. INTRODUCTION

Chru, a member of Vietnam's Austronesian family, is spoken by an estimated 10,000 people in the Don Duong district of Tuyen Duc province and in Binh Tuy province. The analysis here is of the language spoken in Diom village in the district of Don Duong, Tuyen Duc province.

1. THE PHONOLOGICAL WORD

A main syllable and one or two optional presyllables make up the Chru phonological word. The main syllable receives heavier stress, the pre-syllables lighter stress. When two presyllables occur the one just before the main syllable is more lightly stressed.

Using PS for presyllable and MS for main syllable the phonological word is formulated as: ((PS₂) PS₁) MS. The syllables are filled by consonants and vowels as follows:

PS₂: C₁V₁ PS₁: C₂V₂C₃ MS: C₄C₅C₆V₃C₇

The fullest phonological word expansion discovered so far is *pətorblo* 'to turn over'. The maximum expansion of the MS is *brwa* 'work'. (Cf. sections 3 and 5 for distribution of phonemes.)

2. CONSONANTS

2.1 CONSONANT CHART

Stops		Labial	Apical	Alveo- palatal	Velar	Glottal
	vl	p	t	c	k	'
	vd	b	d	j	g	
Fricatives				s		h
Resonants						
liquid	vd		l, r			
nasal	vd	m	n	nh	ng	
median	vd	w		y		
Post-glottal	vd	w'		y'		

2.2 Analytical problems are posed by the glottalised and post aspirated consonants.

2.2.1 Syllable initial glottalised consonants are 'b, 'd, 'w, 'y. The glottal stop and each of these other consonants function freely as independent phonemes. No preglottalised consonants have been found in presyllabic position in which only a CV and CVC patterns are well attested. These glottalised consonants are most simply analysed as sequences.

2.2.2 Post aspirated consonants are ph, th, kh. In some cases where a verb is used to form a noun through an infix -n- there is evidence that the stop plus aspiration is a sequence rather than a unit, e.g. *phà* 'to plane' is in the nominal form *pən-hà* 'a plane'. Stop-continuant sequences are commonly found in the main syllable. Post aspirated stops do not occur in the presyllable. The simplest analysis, therefore, is to regard post aspirated consonants as sequences of phonemes.

2.2.3 The syllable final post aspirated consonant is [yh]. The syllable pattern clearly indicates a complex unit interpretation. Occurring only word finally [yh] may be analysed as an allophone of /s/ since [s] never occurs word finally, and [yh] and [s] are phonetically fairly

close. Of the few words so far discovered having the -yh ending one, mɔ̃nəyh 'pineapple', is reconstructed by Dempwolff as *kenas and *nanas.²

Ernest W. Lee reconstructs 'pineapple' as *m_nas for Proto-Chamic.³ This word appears to be a reflex of Dempwolff's Proto-Malayo-Polynesian reconstructions for 'pineapple' which supports [yh] as an allophone of /s/.

For a parallel example, what is reconstructed by Lee as *kapas 'cotton' for Proto-Chamic is k paɪh in Jorai and kpaɪh in Rade. Here the /s/ is reflected as -ih. On the basis of the foregoing [yh] will be regarded as an allophone of /s/.

2.2.4 The syllable final post glottalised consonants are [w'] and [y']. As with [yh] these are complex units occurring in main syllable final position when the normal pattern has only a single consonant filling that position. One solution is to regard these as allophones of /b/ and /j/ respectively since these segments have phonetic features similar to [w'] and [y']. All are stops, [w'] and /b/ are labial, and [y'] and /j/ are alveopalatal. The phonemes /b/ and /j/ never occur word finally, [w'] and [y'] occur only word finally. However, an allophonic solution raises difficulties of symmetry as James Cooper has pointed out in dealing with this same problem in the analysis of Halang phonemes.⁴ There are no corresponding allophones for /d/ and /g/ which also do not occur word finally. This makes the allophonic solution seem arbitrary.

Another possible solution is to regard [w'] and [y'] as complex units occurring only in word final position. Lee has shown that Proto-Chamic *-c becomes i' in Rəglai and y' in Cham in most environments.⁵ Jorai has a similar reflex in |a|' 'to say' from Proto-Chamic *|a:c|⁶; for this Chru has |à:y|. These reflexes add weight to considering [y'] as a unit.

Concerning [w'] Lee notes a single example in Rəglai in which *p is reflected as [u']. (Rəglai hadiu' 'alive' from *hadip⁷. The Chru reflex is hɔ̃diu'.) This shows a complex segment reflected from a simple unit.

On the basis of this historical data and because of the well attested canonical pattern of the main syllable final consonant slot [y'] and [w'] will be considered unit phonemes occurring in the final consonant position of the main syllable.

2.3 LABIAL PHONEMES

/p/ simple voiceless labial stop.

pah 'to slap'

bah 'to sweep'

plɔi 'village'

blɔi 'to buy'

- /b/ [b] simple voiced labial stop which may vary to fricative word medially.
 brah 'swollen' ba' 'to carry'
 prah 'throw away' wa' 'to write'
- [m] median voiced labial resonant when preceded by a glottal stop and followed by a nasalised vowel.
 /'bǎng/ ['mǎng] 'time'
 /'bang/ ['bang] 'door'
- /m/ nasal voiced labial resonant.
- /w/ median voiced labial resonant.
 ma' 'to take'
 wa' 'to write'
 pa' 'place'
- /w'/ median voiced post glottal labial resonant.
 hɔdiw' 'alive' klɔw' 'to stab'
 kɔ'dip 'to hold in tongs' klɔw 'three'

2.4 APICAL PHONEMES

- /t/ simple voiceless apical stop.
 tra 'more' pɔtɔi 'banana'
 dra 'young woman' pɔdɔi 'rest'
- /d/ [d] simple voiced apical stop.
 mɔda 'rich' drɔi 'self'
 mɔta 'eye' trɔi 'full'
- [n] voiced apical nasal resonant when preceded by a glottal stop and followed by a nasalised vowel.
 /lɔ'dēh/ [lɔ'nēh] 'youngster'
 /rɔ'deh/ [rɔ'deh] 'pebble'
- /l/ lateral voiced apical resonant.
- /r/ medial voiced apical resonant.
 leh 'kidney' blɔi 'to sell'
 reh 'to cut open' brɔi 'to give'
- /n/ voiced apical nasal resonant.
 ana 'mother animal' anũ 'rodent like animal'
 ala 'snake' nhũ 'he, she, it'

2.5 ALVEOPALATAL PHONEMES

/c/ affricated voiceless alveopalatal stop.

/j/ affricated voiced alveopalatal stop.

coh 'to kick' cam 'The Cham'
joh 'to break' jam 'to jail'

/s/ [s] grooved voiceless alveolar fricative which fills non-final consonant slots.

sang 'digging tool' soh 'only'
hang 'spicy' coh 'to kick'

[yh] median voiced alveopalatal resonant followed by voiceless glottal fricative filling the word final consonant slot.

[mɔ̃nəyh] 'pineapple'
cɔ̃nəh 'tributary'

/nh/ voiced nasal alveopalatal resonant.

mɔ̃nhə 'oil' lɔ̃nhəh 'to shake the head'
mɔ̃nas 'pineapple' cɔ̃nəh 'tributary'

/y/ [y] median voiced alveopalatal resonant.

pɔ̃ywa 'to send' tɔ̃ryang 'to be industrious'
pɔ̃jwa 'to thresh' tɔ̃rnhang 'a type of tree'

[nh] voiced alveopalatal resonant when /y/ is preceded by a glottal stop and followed by a nasalised vowel.

/'yām/ ['nhām] 'vegetable'
/'yom/ ['yom] 'to poison'

/y'/ median voiced post glottal alveopalatal resonant.

sà'y 'type of fishing' tuy' 'to light fire'
sày 'hull rice' tuy 'to follow'

2.6 VELAR PHONEMES

/k/ simple voiceless velar stop.

kroi 'different' pɔ̃kau 'tobacco' cak 'probably'
troi 'full' pɔ̃tau 'king, ruler' cang 'wall a house'

/g/ simple voiced velar stop.

goh 'clean' pɔ̃gàl 'turn around'
koh 'to cut' pɔ̃dai 'rice'

/ng/ voiced nasal velar resonant.

'biàng 'yard' ngo' 'on'
biàn 'month' go' 'pot'

2.7 GLOTTAL PHONEMES

/ʔ/ simple voiceless glottal stop.

'wa' 'to wipe'	rɔwah 'to choose'
wa' 'to write'	rɔwa' 'to be ill'

/h/ slit voiceless glottal fricative.

wah 'to fish'	hang 'spicy'
wa 'uncle'	sang 'a digging tool'

3. CONSONANT DISTRIBUTION

3.1 As many as two presyllables may occur in a word. When two presyllables do occur the consonant of the first is a stop, e.g. tɔlɔbat 'worship'.⁸ Voiced stops appear in the second presyllable only when the main syllable initial consonant is voiced or is /ʔ/ or /h/.

The first presyllable is only CV, the second may be CV or CVC. When the pattern is CVC the first consonant is filled only with stops or /s/ and the final consonant is filled only by /l/, /m/, or /r/ with the latter most frequently occurring. Contrasting the CVC and CV patterns of the second presyllable is:

tɔrlɔi 'a line up'
tɔlɔi 'rope'

3.2 The main syllable is obligatory and is formulated in its maximum expansion as: ((c₄)c₅)c₆v₃(c₇), e.g. brwa' 'work'.

Each slot, individually considered, may be filled as follows:

c₄ may be filled by all consonant phonemes.

c₅ may be filled by all consonant phonemes.

c₆ is filled by /y/ spyɑ' 'to go out' and /w/ brwa' 'work'.

c₇ the main syllable consonant slot, has all but the following consonants: /c/, /b/, /d/, /j/, /g/, /nh/.

The most common main syllable pattern is c₄v₃c₇: bah 'to sweep', hɪl 'brave', sap 'voice'.

4. VOWELS

4.1 CHART

(on page 83)

	FRONT		CENTRAL		BACK	
	<i>short</i>	<i>long</i>	<i>short</i>	<i>long</i>	<i>short</i>	<i>long</i>
HIGH	i	ì			u	ù
MID		è	σ	ò	ô	ò
LOW	e	è	a	à	o	ò

4.2 VOWEL POSITION

Chru has eight basic vowel positions. Adding contrastive length and nasalisation gives 27 vowel phonemes. Both long and short oral vowels and long and short nasal vowels have been observed in the front and back high positions and in all the low positions. In the high and mid positions of articulation the distribution is incomplete. High central vocoids are allophone of /σ/. In mid-front position only the long vowel occurs, and that only before -ng. The mid back long vowel, /ò/, tends toward a higher position when followed by -ng or glottal stop. In none of the mid positions has nasalisation been observed. When σ is nasalised it is realised as ɹ. The σ only occurs orally, the ɹ only occurs nasalised, e.g. ɭσhσ 'rice hull', ɭσhɹ 'sharp'.

4.3 FRONT VOWELS

- /i/ voiced high front unrounded short vocoid which varies between close and open positions.
wɪl 'round'
- /ì/ voiced high close front unrounded long vocoid.
wìl 'curved'
- /è/ voiced mid close front unrounded long vocoid.
prèng 'plate'
- /e/ voiced mid open front unrounded short vocoid.
ge' 'what'
- /è/ [e] voiced mid open front unrounded long vocoid.
lèh 'to peel'
- [ae] voiced low close front unrounded vocoid when contiguous to palatals.
cèng 'to carry'

4.4 CENTRAL VOWELS

- /σ/ [σ] voiced mid central unrounded short vocoid.
pσng 'to hammer'

- [u] voiced high central unrounded short nasalised vocoid.
lơũ' 'sharp'
- /ơ/ [ơ] voiced mid central unrounded long vocoid.
pờng 'to hit'
- [ũ] voiced high central unrounded long nasalised vocoid.
sonũ' 'thing'
- /a/ voiced low central short vocoid.
brah 'swollen'
- /à/ voiced low central long vocoid.
bràh 'rice'

4.5 BACK VOWELS

- /u/ voiced high back rounded short vocoid.
blung 'spider'
- /ũ/ voiced high back rounded long vocoid.
blùng 'balloon'
- /ô/ voiced mid back rounded short vocoid.
pô 'lord'
- /ò/ voiced mid back rounded long vocoid.
cò 'tease'
- /o/ voiced low back rounded short vocoid.
so' 'to dig'
- /ò/ voiced low back rounded long vocoid.
sò' 'to pound'

5. VOWEL DISTRIBUTION

5.1 Presyllable vowels are either /ơ/ or /a/ and are distributed as follows: /ơ/ occurs only following a consonant, /a/ stands alone.

kơdung 'pocket'

adung 'nose'

The /ơ/ tends toward a higher position when contiguous to dental or alveopalatal consonants.

5.2 In the main syllable nasalised vowels may appear contiguous to nasal consonants. They frequently appear in the environment of /h/, /'/, or /r/: hã 'you', tơ'ũ' 'knee', srăp 'fed up with'.

6. NOTE ON A PROSODIC FEATURE

Chru seems to have a non-contrastive feature of register in which the vowel and sometimes the syllable has a lax, breathy quality or a tense, clear quality. Often the breathy quality is a concomitant of length in the vowel and voicing of the syllable initial stop.

NOTES

1. I am grateful to David Thomas, Kenneth Gregerson, Ernest Lee, and others of the Summer Institute of Linguistics and my Chru language helper, for their assistance during the preparation of this paper.
2. Dempwolff, Otto, *Vergleichende Lautlehre des Austronesischen Wortschatzes*. This information is taken from an unpublished English translation of Dempwolff's Wordlist.
3. Lee, Ernest W., *Proto-Chamic Phonologic Word and Vocabulary*, a Ph.D. dissertation reproduced by the University Microfilms Inc., Ann Arbor, 1966.
4. Cooper, James, 'Halang Phonemes', *Mon Khmer Studies* 11, p. 89, Linguistic Circle of Saigon, 1966.
5. op. cit., Lee, p. 156.
6. ibid., p. 165.
7. ibid., p. 163f.
8. This example is of the Jut-Modan dialect of Chru.

DEVOICING, ASPIRATION, AND VOWEL SPLIT IN HAROI: EVIDENCE FOR REGISTER (CONTRASTIVE TONGUE-ROOT POSITION)

ERNEST W. LEE

0. INTRODUCTION

Haroi has the most complex vowel system of any Chamic language, having eleven simple vowel positions plus length contrast, glided vowels, and nasalisation (cf. Mundhenk in this volume). Contrast this with Roglai which has six simple vowels plus length and nasalisation. The Roglai vowel inventory quite closely parallels the vowel inventory reconstructed for Proto-Chamic (Lee 1966). At least part of the inventory of vowels in Haroi came from the splitting of vowels of the reconstructed Proto-Chamic. The most obvious split, because of its frequency, is the development of Haroi *ia* (a glide from high central unrounded to a neutral central quality) and *a*, both from PC **a*. The development of *ia* shows a clear connection with a preceding Proto-Chamic voiced obstruent in the majority of instances, but in other instances *ia* is connected with a preceding Proto-Chamic high vocoid (either syllabic or non-syllabic). Either the voiced obstruent or the high vocoid, however, may be separated from the affected vowel by one to three phonetic segments. In addition the reconstructed voiced obstruents regularly show up as voiceless (except those which are preglottalised) and often as aspirated in Haroi.

The purposes of this paper are: 1) To note the various historical developments of devoicing, aspiration, and vowel split in Haroi. 2) To postulate that a single feature of tongue-root position (with probable concomitant larynx lowering) as a register system¹ which originated from obstruent voicing and vowel height can alone account for all of these diverse developments that otherwise appear to be motivationally unrelated

and also account for the apparent distance of the motivating feature from the affected segment. 3) To suggest that devoicing of the syllable initial obstruents may actually be caused by tongue-root advancement.

1. HISTORICAL DEVELOPMENTS

1.1. DEVOICING

Of the Chamic languages, devoicing² of syllable initial voiced obstruents (Rule 1)³ has occurred in Eastern Cham (Doris Blood 1962.12), Western Cham (Hor and Friberg, in this volume), Cat Gia Roglai (my own word lists) and in Haroi (word list by Hella Goschnick and from examples given by Mundhenk in this volume).

$$\text{Rule 1.} \quad * \begin{bmatrix} +\text{cons} \\ -\text{son} \\ +\text{vd} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{cons} \\ -\text{son} \\ -\text{vd} \end{bmatrix} / _ _$$

The evidence for reconstruction of voiced obstruents for Proto-Chamic is twofold: 1) Other Chamic languages as Rade, Jorai, and Northern Roglai have both voiced and voiceless obstruents for the lexical items reflected only by voiceless stops in Haroi and Cham: PC *dlai, Rade dlai, Jorai dlai, Roglai dlai, Haroi tli'ai 'forest'; PC *tlau, Rade tlau, Jorai tlau, Roglai tlau, Haroi tli'au 'to laugh'. 2) Many of the items are of Austronesian origin and voiced obstruents have been reconstructed for Proto-Austronesian. These contrast with voiceless obstruents: PA *pajay, PC *padai, Haroi path'ai 'unhusked rice'.

Other examples of devoicing in Haroi are: 1) In the presyllable (any non-ultimate syllable): PC *darah, Haroi čari'ah 'blood'; PC *danau, Haroi čani'au 'pond'. 2) In the main syllable (the stressed ultimate syllable): PC *kubau, Haroi kaph'au 'water buffalo'; PC *habəu, Haroi ʔaph'au 'ashes'; PC *blah, Haroi pliah 'to split'; PC *bras, Haroi pri'ah 'husked rice'; PC *ʔugha, Haroi ʔakha 'root'.

Proto-Chamic preglottalised stops do not devoice, but in these cases the voiced elements are not syllable initial: PC *jaʔbu, Haroi čabu 'to dry (in sun)'; PC *paʔdiaʔ, Haroi padeaʔ 'hot' (Haroi /b/ and /d/ are phonetically preglottalised).

1.2. ASPIRATION

The obstruents which devoiced in Haroi also regularly became aspirated if the obstruent was immediately preceding the vowel of the main syllable of the word (Rule 2): PC *kubau, Haroi kaph'au 'water buffalo'; PC *pubah, Haroi paph'iah 'mouth'; PC *dada, Haroi čath'ia 'chest'; PC *habəu, Haroi ʔaph'au 'ashes'; PC *bap, Haroi ph'auʔ 'full'; PC *digəi, Haroi

čakh+i 'tooth'; PC *ʔadei, Haroi ʔath+i 'younger sibling'.

$$\text{Rule 2.} \quad * \begin{bmatrix} +\text{cons} \\ -\text{son} \\ +\text{vd} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{cons} \\ -\text{son} \\ -\text{vd} \\ +\text{asp} \end{bmatrix} / _ \text{VC}_0 \#$$

The alveo-palatal PC *j would appear to have become first aspirated and then later became an alveopalatal fricative [ʃ] alternating with an affricate [tʃ] (cf. Mundhenk in this volume): PC *hujān, Haroi ʔasʔan (s=[ʃvʔʃ]) 'rain'.

A Proto-Chamic voiced obstruent in a presyllable before a main syllable beginning with the liquid /l/ is also reflected by aspiration in Haroi: PC *jalān, Haroi čalʔan [tʰʌlʔan] 'road'.⁴

In the other positions the obstruent simply devoices without concomitant aspiration: 1) Preceding a consonant in the main syllable as in PC *dlai, Haroi tliʔai 'forest'; PC *blei, Haroi pliʔi 'to buy'; PC *brei, Haroi priʔi 'to give'; PC *bras, Haroi priʔah 'husked rice'; 2) Presyllable preceding non-liquids as in PC *danau, Haroi čaniʔau 'pond'; PC *buŋā, Haroi paŋiʔa 'flower'.

1.3. VOWEL SPLIT

1.3.1. Related to voicing feature of preceding obstruent

Along with the devoicing of the obstruents in Haroi is a consistent split of vowels. From the word list available, the most evident shift (Rule 3) is that main syllable PC *a (long or short, oral or nasal) went to iʔa (a high central unrounded vocoid gliding to a neutral central vowel): PC *hujān, Haroi ʔasʔan 'rain', PC *dlai, Haroi tliʔai 'forest'; PC *padai, Haroi pathʔai 'unhusked rice'. The shift of main syllable *a to iʔa takes place not only where there is a devoiced obstruent in the main syllable as above, but also where there is a more remote devoiced obstruent in the presyllable: PC *gunām, Haroi kaniʔam 'cloud'; PC *buŋā, Haroi paŋiʔa 'flower'; PC *bala, Haroi paliʔa 'tusk'; PC *jalān, Haroi čalʔan 'road'.

$$\text{Rule 3.} \quad *a \rightarrow iʔa / \cdot \begin{bmatrix} +\text{cons} \\ -\text{son} \\ +\text{vd} \end{bmatrix} \text{ x_C}_0 \#$$

Proto-Chamic murmured stops (phonemicised as stop plus h) do not show the same effect on vowels which suggests that they either devoiced earlier than the plain voiced stops or that the devoicing preceded the development of the aspiration of 1.2.: PC *jhāt, Haroi sat 'bad'; PC *ʔugha, Haroi ʔakha 'root'.

If there was no original voiced obstruent between an original voiceless obstruent and the main syllable vowel, then the main syllable *a did not shift (Rule 4): PC *pināŋ, Haroi panāŋ 'areca nut'; PC *takai, Haroi čakai 'leg'; PC mata, Haroi mata 'eye'; PC *tlau, Haroi tlau 'to laugh'; PC *rusa, Haroi lasa 'deer'.

$$\text{Rule 4. } *a \rightarrow a / . \left[\begin{array}{c} +\text{cons} \\ -\text{son} \\ -\text{vd} \end{array} \right] x_C_0\#$$

Less common, but still quite evident is the reflection of PC *əi by ɿi where there was a preceding voiced obstruent in the proto-language (Rule 5), but by oi when there was a preceding voiceless obstruent (Rule 6): PC *digəi, Haroi čakhɿi 'tooth'; PC *brəi, Haroi prii 'to give'; PC *ʔadəi, Haroi ʔathɿi 'younger sibling'; PC *bləi, Haroi plɿi 'to buy'; but PC *kuməi, Haroi kamoi 'female'; PC *l_səi, Haroi lasoi 'cooked rice' (PC *əi reflects Proto-Austronesian *-ih in all of these examples).

$$\text{Rule 5. } *əi \rightarrow \text{ɿi} / . \left[\begin{array}{c} +\text{cons} \\ -\text{son} \\ +\text{vd} \end{array} \right] x_ \#$$

$$\text{Rule 6. } *əi \rightarrow \text{oi} / . \left[\begin{array}{c} +\text{cons} \\ -\text{son} \\ -\text{vd} \end{array} \right] x_ \#$$

Proto-Chamic *əu apparently was reflected only by au (Rule 7) at some stage with a subsequent shift of au to ɿau (Rule 8) along with the shift of *a to ɿa in the same environments described above: PC *habəu, Haroi ʔaphɿau 'ashes'; PC *bahrəu, Haroi parɿau 'new'; PC *biləu, Haroi palɿau 'feather'; but PC *patəu, Haroi patau 'stone'; PC *kukəu, Haroi kakau 'claw, nail'; PC *ʔasəu, Haroi ʔasau 'dog'.

$$\text{Rule 7. } *əu \rightarrow \text{au}$$

$$\text{Rule 8. } *au \rightarrow \text{ɿau} / . \left[\begin{array}{c} +\text{cons} \\ -\text{son} \\ +\text{vd} \end{array} \right] x_ \#$$

Proto-Chamic *u is reflected by u in Haroi following reconstructed syllable initial voiced obstruents (Rule 9), but by ô following syllable initial voiceless obstruents (Rule 10): PC *tijuh, Haroi časuh 'seven'; PC *ʔiduŋ, Haroi ʔathuŋ 'nose'; but PC *pituʔ, Haroi patôʔ 'star'; PC *thuŋ, Haroi thôn 'year'; PC *ʔapui, Haroi ʔapôi 'fire'.

$$\text{Rule 9. } *u \rightarrow u / . \left[\begin{array}{c} +\text{cons} \\ -\text{son} \\ +\text{vd} \end{array} \right] x_{-C_0} \#$$

$$\text{Rule 10. } *u \rightarrow \hat{o} / . \left[\begin{array}{c} +\text{cons} \\ -\text{son} \\ -\text{vd} \end{array} \right] x_{-C_0} \#$$

Similarly *i is reflected by i following reconstructed syllable initial voiced obstruents (Rule 11), but by ê (èy before ?) following syllable initial voiceless obstruents (Rule 12)⁵: PC *ʔabih, Haroi ʔaphih 'all'; but PC *čim, Haroi čëm 'bird'; PC *tasiʔ, Haroi časèyʔ 'ocean'.

$$\text{Rule 11. } *i \rightarrow i / . \left[\begin{array}{c} +\text{cons} \\ -\text{son} \\ +\text{vd} \end{array} \right] x_{-C_0} \#$$

$$\text{Rule 12. } *i \rightarrow \left\{ \begin{array}{c} \hat{e}y \\ \hat{e} \end{array} \right\}_1 / . \left[\begin{array}{c} +\text{cons} \\ -\text{son} \\ -\text{vd} \end{array} \right] x_{- \left\{ \begin{array}{c} ? \\ C_0 \end{array} \right\}_1}$$

1.32. Related to height feature of preceding vocoid

Not all of the vowel splits occur where there has been voicing of obstruents involved; the same splits appear to be related to the height feature of a preceding vocoid if the onset of neither the presyllable nor the main syllable began with an obstruent.

As following a reconstructed voiced obstruent, so following a high vocoid, PC *a in the main syllable is replaced by ia if there are no voiceless obstruents preceding the *a within the phonological word. Hence Rule 13 assumes the previous application of Rule 4. The following examples are exhaustive for the data available: 1) Following a high vocoid in the presyllable: PC *ʔinā, Haroi ʔanīa 'female animal'; PC *lumān, Haroi lamīan 'elephant'; PC *lumāʔ, Haroi lamīaʔ 'fat'; PC *limā, Haroi lamīa 'five'; PC *humā, Haroi hamīa 'field'; PC *ʔula, Haroi ʔalīa 'snake'; 2) Following the semivowel y as onset of a monosyllabic word: PC *yān, Haroi yīan 'god, spirit'; PC *yāp, Haroi yīauʔ 'to count'. There are no examples of syllable initial y following a presyllable without an obstruent and no examples of w as onset of a monosyllabic word, but syllable initial w following a presyllable appears not to affect the following vowel: PC *hawai, Haroi havai 'rattan'; PC *ʔawa, Haroi va 'uncle'.

$$\text{Rule 13. } *a \rightarrow ia / \left\{ \begin{array}{c} C_1 \\ \# \end{array} \right\}_1 \left[\begin{array}{c} -\text{cons} \\ +\text{son} \\ +\text{high} \end{array} \right] \left\{ \begin{array}{c} C_1 \\ \emptyset \end{array} \right\}_1 -C_0 \#$$

The following sets show the contrast of reflexes of PC *a following high and low vocoids: PC *ʔinā, Haroi ʔan̩a 'female animal' and PC *ʔanāk, Haroi ʔanaʔ 'offspring'; PC *humā, Haroi ham̩a 'field' and PC *ʔamā, Haroi ʔama 'father'. (The Proto-Chamic forms above have the same vowel in the presyllables as Proto-Austronesian.)

The following sets are those with high vocoid and reconstructed voiceless obstruents in either syllable preceding the *a which is not replaced by ia: PC *tupaʔ, Haroi čapaʔ 'straight, right'; PC *ʔusar, Haroi ʔasal 'seed, flesh'; PC *sula, Haroi hala 'leaf'; PC *tulāŋ, Haroi calāŋ 'bone'.

The evidence for most of the other vowels is not available from the word lists except that PC *ia is reflected by ia as expected in one example: PC *lumiāʔ, Haroi lamiaʔ 'to put away'.

Finally, it should be noted that several of the examples from 1.31. could also be repeated in 1.32. since words like Haroi ʔas̩ian from PC *hujān 'rain' and Haroi paŋia from PC *buŋa 'flower' reflect forms with both a preceding voiced obstruent and a preceding high vocoid.

2. MOTIVATING FACTOR(S) FOR VOWEL SPLIT AND ASPIRATION

On the surface it would appear that the voicing of the obstruent or perhaps devoicing was the motivating factor in the development of aspiration and vowel split in Haroi, but this could not account for the parallel vowel split connected with preceding high vocoids.

Even if we posit voicing as the conditioning factor in some cases and vocoid height in other cases, there are still several unanswered problems: 1) Is not a shift from a voiced stop to a voiceless aspirated stop (e.g. *b to p^h) an unnatural sound change? 2) What physiological feature of voicing can cause a vowel to become higher and glided? 3) How can voicing and/or vocoid height affect the quality of a segment removed from it by as many as three intervening segments? 4) What physiological features do high vocoids and voiced obstruents share that would enable them to have the same effect on the following vowels?

I will attempt to demonstrate that all of the questions can be answered by positing register as a feature of some earlier stage of Haroi although it does not appear to be currently a feature of Haroi. This possibility was suggested from reading Gregerson's (1976) discussion of tongue-root as a feature in Mon-Khmer. Although Haroi is not Mon-Khmer, it is located in a Mon-Khmer milieu and both Western and Eastern Cham to which Haroi is closely related also have register systems. Following Gregerson and others, I assume tongue-root advancement (TRA) v. tongue-root retraction (TRR) to be the primary physiological factor

involved in register systems of Southeast Asia. Gregerson (1976:345-6) states:

"In view of these observations it seems possible to suggest that the advancement or retraction of the tongue-root can constitute a major air stream regulator. In a forward position the tongue body ideally raises vowel height, produces enlarged resonant pharynx cavity, and permits the uninhibited flow of air through the glottis for voicing of consonants. Conversely, in a retracted posture the tongue body lowers the tongue height, reduces the pharyngeal resonance, and restricts the flow of air thereby producing a voiceless state for consonants."

2.1. SHIFT FROM VOICED STOPS TO VOICELESS UNASPIRATED STOPS IS UNNATURAL?

Gandour (1974a:347) attempts to resolve the problem of having an unnatural sound change *b to p^h etc. for the Tai languages by positing a series of murmured consonants b̤, etc. rather than plain voiced stops so that the change can follow a "...natural line of phonetic development - *b [I am sure he intended b̤] → p^h → p^h → p..." (some Tai languages retain p^h as a reflex). This would leave the Proto-Tai system with a series of murmured stops but apparently with no plain voiced stops.

Such a solution does not seem feasible for Haroi. Murmured stops need to be reconstructed for Proto-Chamic because of evidence in Cham, Rglai, and Rade. For Cham the murmured stops are reflected only in the use of voiced aspirated symbols in the script, but Rade and Rglai both retain murmured stops. As might be expected the murmured stops are much less frequent than the plain voiced stops in these languages. In Haroi the Proto-Chamic murmured stops (phonemicised as stop plus h) are reflected by voiceless aspirated stops except for PC *jh which is reflected by s. This shift to voiceless aspirated stops and s appears to have preceded the development of tongue-root contrast since the vowels following Proto-Chamic murmured stops are unaffected.

In addition to the murmured stops simple voiced stops are reconstructed for Proto-Chamic and many of these are in lexical items for which simple voiced stops are also reconstructed for Proto-Austronesian. It would seem unwise to posit these as murmured in both Proto-Austronesian and Proto-Chamic in order to account for Haroi aspiration. Rather, the TRA feature such as I am positing for an earlier stage of Haroi is often described for Southeast Asian languages as being breathy (cf. Cambodian, Hre, Jeh (Gregerson 1976:323,8)).

The actual physical properties of TRA and TRR vary from language to language and from one stage to another in the same language without loss of the TRA-TRR contrast (cf. Kenneth D. Smith, 1968). Hence, it would be very natural for Haroi to develop breathiness as a part of the TRA

feature and for this breathiness to become aspiration in the absence of any intervening segment between the stop and the nucleus of the syllable. The change of *b to p^h, etc. via a TRA feature is not unnatural, but rather is quite natural.

2.2. HOW CAN OBSTRUENT VOICING MOTIVATE VOWEL HEIGHTENING AND GLIDING?

Gregerson (1976:330-6) asks the same question and answers it in considerable detail with evidence which is not repeated here. He concluded that both vowel heightening and centering glides (cf. Cambodian (Gregerson, 1976:323)) are also normal concomitants of a TRA feature.

It is not then the voicing of the obstruent but the TRA feature which produces the vowel heightening and gliding. This accounts for the Haroi centering glide *ia* from PC *a. Assuming PC *i and *u to have already had a relatively advanced tongue-root position, the development of the Haroi phonemes *i* and *u* reflect the TRA feature and the phonemes *ê* and *ô* reflect the TRR feature with which vowel lowering is associated. This assumes that at some stage what is now reflected as *ia*, *i*, *u* and *a*, *ê*, *ô* were subsets of high v. low or tense v. lax allophones of a single set of vowels with TRA-TRR being the conditioning factor. With the loss of TRA-TRR as a contrastive feature, two separate series of vowel phonemes developed.

2.3. HOW CAN VOICING OR VOCOID HEIGHT AFFECT REMOTE SEGMENTS?

The affected vowel in the Haroi splits was always the nucleus of the main syllable, but the voiced obstruent or high vocoid of Proto-Chamic connected with the shift could be the initial segment of the main syllable, the nucleus of the presyllable, or the onset of the presyllable. It is not natural for a segment so far removed to affect another segment. Rather the conditioning factor needs to be one which belongs to a larger unit. Register is normally a feature of an entire syllable or phonological word because of the slower movement of the tongue-root (cf. Gregerson 1976:358ff.). Hence it becomes natural for a presyllable which is TRA to cause a following syllable to also become TRA or for a presyllable which is TRR to cause a following syllable to become TRR.

2.4. WHAT COMMON DENOMINATOR DO HIGH VOCOIDS AND VOICED OBSTRUENTS HAVE TO PRODUCE IDENTICAL SOUND CHANGE?

Gregerson suggests that we

"...assume that, rather than several register features issuing from the one voiced:voiceless in some sequential sense, all the features (voicing, pitch, vowel aperture, and voice quality) coexisted (as in modern Mng) constituting a multi-

feature prosodic opposition dichotomizing all syllables (or phonological words). It is suggested that all of these phonetic features are effects of an underlying opposition between tongue-root advancement *vs.* tongue-root retraction. Voiced initials are an effect of advancement and voiceless initials of retraction of the tongue body." (343)

I would rather assume that all of these features potentially existed as manifestations of TRA *v.* TRR rather than assuming that all of them had to coexist at any one time. I would further posit that the TRA-TRR contrast in the precursor of present day Haroi *did* develop from the voicing contrast and the vocoid height contrast.

High vocoids tend to have greater tongue-root advancement than low vocoids. This is supported by the electromyographic research of Smith and Hirano (1968:147) who state:

"The posterior of the genioglossus [the principal tongue muscle which pulls the root forward] shows marked activity for high vowels and 'lingual' consonants. This muscle is consistently and reliably more active for the tense, high vowels i, e, and u than their lax counterparts ɪ, ɛ, and ʊ. All other things being equal, the activity is greater for phonologically high vowels than for lower vowels."

For the stops, however, Timothy S. Smith (1971:63) found that the mid-pharyngeal width is greater for voiced stops than voiceless stops (as others have already noted), but he also found that it is not attributable to muscular activity. He observed that

"...the activity of the posterior genioglossus muscle during the voiced alveolar stops [of English] was not significantly different from the activity during the voiceless stops. In fact the voiceless stops often showed slightly greater activity."

He also observed that the widening cannot be from depression of the hyoid bone either since the hyoid bone was 4 mm higher for the voiced stop than for the voiceless. He then concluded that "the widening of the pharyngeal cavity during voiced stops is primarily due to the passive reaction of the non-tensed vocal tract." (65)

This appears to suggest that any tongue-root advancement for English voiced stops is passive. I would suggest that perhaps for Proto-Austronesian and perhaps also for Proto-Chamic a similar situation may have existed but that somewhere along the line, the passive advancement of the tongue-root conditioned by the increase in supraglottal pressure attained in the production of voiced obstruents became an active TRA feature and then that the TRA feature associated with voicing and the TRA feature associated with vowel height merged and became a feature of the syllable contrasting with TRR of all other syllables. It is very likely that larynx lowering accompanied the TRA feature as in the Mon-Khmer languages of the area. Gregerson has noted that larynx lowering

and the TRA feature are natural concomitants and so form an unmarked relationship.

It is acknowledged here that at least one other Austronesian language outside the Chamic group undoubtedly does have a register system. Catford (1964) mentions larynx lowering, but does not mention the tongue-root in his discussion of Javanese. His general description, however, has the classic earmarks of a register system. He says:

"Lowered-larynx sounds occur (in phonological opposition to normal or raised-larynx sounds) in Javanese. Here the stops and affricates commonly written b, d, ḍ, dj, g are, like the corresponding series, p, t, ṭ, tj, k, completely voiceless: the series b, d, etc., however, are produced with the larynx considerably lowered (a downward-forward displacement of the hyoid bone of up to about 1 cm can easily be observed). During the stops this produces no acoustic or auditory effect, but the lowered larynx position persists into the following vowel, where it can be observed acoustically as a downward shift of formant 1, and auditorily as a 'muffled' or 'centralized' vowel quality." (34-35)

The factors which I have posited for the origin of the TRA-TRR contrast must be ranked to show which syllable became TRA and which TRR. Rules 14 and 15, in which S = syllable and x = any or no string, are ordered.

$$\text{Rule 14. } *S \rightarrow \begin{cases} \text{TRA if } \left\{ \begin{array}{l} \# \begin{bmatrix} -\text{cons} \\ +\text{son} \\ +\text{high} \end{bmatrix} \\ \cdot \begin{bmatrix} +\text{cons} \\ -\text{son} \\ +\text{vd} \end{bmatrix} \end{array} \right\} x \\ \text{TRR if } \cdot \begin{bmatrix} +\text{cons} \\ -\text{son} \\ -\text{vd} \end{bmatrix} x \end{cases}$$

$$\text{Rule 15. } *S \rightarrow \begin{cases} \text{TRA if } x \begin{bmatrix} +\text{syl} \\ -\text{cons} \\ +\text{high} \end{bmatrix} x \\ \text{TRR if } x \begin{bmatrix} +\text{syl} \\ -\text{cons} \\ -\text{high} \end{bmatrix} x \end{cases}$$

Rule 14 generates a TRA syllable if the syllable began with a non-syllabic high vocoid or a voiced obstruent and a TRR syllable if it began with a voiceless obstruent. For the remaining syllables, Rule 15 generates a TRA syllable if the nucleus was a high vocoid and a TRR syllable if the nucleus was a low vocoid.

At the first stage of the TRA-TRR contrast then, there would have been two possibilities for monosyllabic words: TRA and TRR. Disyllabic

words would have had four possibilities: TRA+TRA, TRA+TRR, TRR+TRA, and TRR+TRR. Eventually, however, the four possibilities began to merge leaving only two. This merger was undoubtedly due to the sluggish nature of tongue-root movement. Figure 1 shows the direction of merger of the tongue-root feature; the vertical arrows indicate the direction of merger if the main syllable initial consonant was *not* an obstruent and the horizontal arrows indicate the direction if the main syllable initial consonant was an obstruent.⁶ The resultant words were either TRA+TRA or TRR+TRR which elevated the register system from a syllable to a word level feature with TRA and TRR phonological words.

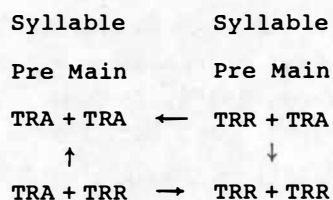


Figure 1. DIRECTION OF MERGER OF TONGUE-ROOT FEATURE.

After the development of aspiration of the initial stop of the main syllable of TRA words, the loss of voicing of the stops, and the merger of presyllable high vowels with the presyllable low vowels, and the split of the main syllable vowels, the TRA-TRR contrast itself was lost leaving only the indelible traces in the new vowel set and in the aspirated stops.

One puzzling factor that remains is whether Cham and the Haroi precursor developed register together or whether it was an independent development in each. The difficulty in trying to make it a shared innovation stemming from the era when they were still one language is that Northern Roglai which is evidently much closer to Cham than either Cham or Northern Roglai is to Haroi shows no evidence that I have been able to observe of a register system. Voiced stops are retained as simple voiced stops, the vowel system is no more complex than Proto-Chamic with no evidence of allophones having any relation to preceding obstruents or high vocoids, and with a high-low contrast of vowels in the presyllable retained. Southern Roglai which is closer to Cham does, on the other hand, give some evidence of tongue-root placement in the allophones of vowels.

The one possible bit of evidence for tongue-root involvement that pervades most of the Chamic languages is that voiceless stops in the presyllable reflect Proto-Austronesian voiced stops if the main syllable

begins with a voiceless obstruent. Rade, however, appears not to have this shift although the extensive reduction of presyllables in Rade obscures the picture: PA *depah → Rade ?epa 'span' which clearly reflects a voiced consonant since an intermediate stage with t- in the presyllable would have been expected to become k- in Rade. (Rade ?e is the normal reflex of any presyllable beginning with a voiced coronal regardless of the quality of the following vowel.)

3. MOTIVATING FACTOR(S) FOR DEVOICING

One intriguing factor which interests me is the widespread devoicing of syllable initial stops (throughout the Southeast Asian area) in connection with the development of register or tone. Some of the examples are Chinese (Cheng and Wang, 1970), Cambodian (cf. Gregerson, 1976:342), Mon (cf. Gregerson, 1976:342), Tai (Li, 1954), Cham, Haroi, and others. Gregerson (1976:351-7) discusses in detail the relationship of pitch (as well as the factors already covered in this paper) to tongue-root position and does not need to be discussed further.

The question I want to pose is: Why does language after language devoice the syllable initial stops (including, at least in Cham and Haroi, intervocalic stops which one would not have expected to devoice) as the register or tone system develops? This is especially relevant in light of Gregerson's suggestion that the advanced tongue-root "permits the uninhibited flow of air through the glottis for voicing of consonants." (1976:346). If the advanced tongue-root produces a situation favourable for voicing, why do languages like Haroi and Cham devoice stops when other Chamic languages like Northern Rglai and Rade that have little or no evidence of active tongue-root involvement do not devoice? (I have already mentioned that the voiced stops reconstructed for Proto-Chamic are firmly supported by evidence from the widespread Austronesian language family.)

So far Cheng and Wang (1970:CW10) are the only ones I have found who consider the question. They offer no answer but simply say:

"Nonetheless, it remains to be discovered what were the exact physical characteristics that the oblique tone had which facilitate the devoicing of the initial consonant."

I do not claim to have a definitive answer to the question, but am suggesting that there is something physiological about active tongue-root advancement which facilitates devoicing.

Voicing is a marked feature (relative to laryngeal activity). It is natural for sonorants, but extra muscular activity is required in the larynx to produce voicing for obstruents which have a major constriction

in the oral cavity (cf. Chomsky and Halle, 1968:300-1).

While tongue-root advancement widens the pharyngeal cavity, it also stretches the vocal cords (cf. Ladefoged, 1971:7 and Ohala and Ladefoged, 1970:13) apparently making maintenance of obstruent voicing more difficult. Timothy S. Smith's findings concerning the tendency for slightly greater activity of the genioglossus muscle for voiceless stops than for voiced stops would tend to support the possibility that tongue-root advancement as well as tongue-root retraction is more favourable to voicelessness of obstruents than to voicing.

If, as I have suggested for the precursor of Haroi, passive enlargement of the pharyngeal cavity with the tongue-root pushed forward provided the impetus for the development of an active tongue-root advancement, then it is highly possible that as tongue-root advancement took over the contrastive function formerly carried by the voicing, the marked feature of voicing yielded to the unmarked feature of voicelessness even in intervocalic position. In other words, obstruent voicing is best maintained in the environment of a neutral or relaxed tongue-root position rather than when it is actively advanced or retracted. It should be noted, however, that as long as the TRA-TRR contrast is maintained, the actual tongue musculature and pharyngeal cavity for the originally contrastive series of obstruents will be quite different even though acoustically and auditorily the same. The acoustic and auditory difference will only be evident from segments in the rest of the syllable (cf. Catford, 1964:34-5).

NOTES

1. I gratefully acknowledge Kenneth J. Gregerson's paper (1976) on tongue-root and register in Mon-Khmer and the very stimulating discussions with him which put me on the track in developing this paper and which has provided me with the foundation upon which I build. I also appreciate the helpful comments received from Kenneth L. Pike, David D. Thomas and Hella Goschnick. Without Goschnick's Haroi word list and Tegenfeldt's description of the Haroi phonemes, the latter of which is included in this volume, this study would not have been possible.
2. See also Note 6 and the final paragraph of section 2.4. for an example of devoicing involving more of the Chamic languages.
3. Most notations follow Schane (1973) in the rules in this paper with the addition that *x* is used to indicate any or no string and the period (.) is used to indicate syllable boundary which may be coterminus with the boundary of any larger phonological unit.
4. Mundhenk analyses this as an allophone of the simple stop rather than as phonemic aspiration since it is non-contrastive in this position. Contrast this with Haroi čathia 'chest' and čakhii 'tooth' above where the č is not aspirated.
5. In rules 12 and 13, the subscript numeral before and after the braces is used, following Harms (1968:59), to indicate that the top line in each set of braces is to be read as part of one environment and the bottom line in each set of braces as part of another environment.
6. Alternatively, it is possible that there was no assimilation or merger if the main syllable began with an obstruent, but there is some evidence from the other Chamic languages supporting a regressive tongue-root assimilation (see final paragraph of this section).

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HAROI CLAUSES¹

HELLA GOSCHNICK

1. Introduction
2. Clause Characteristics
3. Nuclear Tagmemes
4. Action Clauses
5. Description Clauses
6. Peripheral Tagmemes

1. INTRODUCTION

There are about 10-15,000 Haroi speakers living in the western half of Phú-Yên and Bình-Định provinces and in Phú-Bồn province of Việt-Nam. The Haroi (Hroy, Hrway) language is classified as a member of the Chamic branch of Malayo-Polynesian. The linguistic similarities indicate a closer relationship with the Malaysian than with the Philippine languages though there are no records to indicate where the Chamic people came from or at what date they landed in Việt-Nam.

As to the subgrouping of the Chamic languages, one can deduce from the phonological comparisons and the number of cognates that the Northern Chamic language group (Rade, Jarai) must have been separated from Cham longer than the other Southern Chamic languages (Chru, Roglai) have been separated from Cham. Eastern and Western (Cambodian) Cham belong to the Southern Chamic group. There is some uncertainty as to which group Haroi should be classified with. My own impression from contacts with Rade, Jarai, Cham, and Roglai speakers is that the Northern Chamic languages are closer to Haroi in the number of cognates in daily speech and in their pronunciation of these. Therefore I feel that mutual intelligibility would place Haroi with the Northern Chamic languages. On the

other hand a Haroi speaker can more readily learn to understand a Southern Chamic language than can a speaker of Rade or Jarai which would indicate that Haroi is closer to Southern Chamic than are either Rade or Jarai. From this one can deduce that the Haroi must have had a longer contact with Cham.

The Haroi, at least for some time, must have been a part of, or at least influenced by, the old Champa empire. According to Chinese historians the kingdom of Champa was founded in A.D. 192 around the area of Huế. From there the Cham people and culture spread to the south. Cham inscriptions from the second half of the fourth century have been found in Quảng-Nam and Phú-Yên provinces. (Note that Phú-Yên is part of the present Haroi area.) At that time the Cham people already had a high culture (temples, sculptures) and an organised system of government, both being developed as a result of influence from India.

Under pressure of the Vietnamese from the north, the Cham capital was moved south to Quảng-Nam province about A.D. 450, and to Bình-Định province in A.D. 999. The Cham territory extended from Huế to Phan-Rang.

In a Cham inscription in the 12th century there is mention of a fight with the savages in the mountains, named as Rade, Mada and others. They had invaded the plains in 1151, but were then defeated by the Cham king. I have been unable to ascertain the identity of the Mada, so it is not yet clear which tribes were involved, nor is it clear what was their previous or subsequent relationship with the Cham rulers.

After the Cham were defeated by the Vietnamese in 1471, only a diminutive Cham state continued to exist. When the Vietnamese Nguyễn lords, nominally fighting for the Lê dynasty, conquered the area from Phú-Yên down to Khánh-Hòa in 1653 formal Cham-Haroi contacts ended.

The few Cham people still living in the Phan-Rang area have preserved their script and with it the memory of the ancient kingdom and culture. They have records of other Chamic people being scattered into the mountains.² They know of four different peoples which they call Cham Kur, Cham Jarai, Cham Raglai and Cham Ro, and call themselves Cham Pah '*Cham of the ruling class*'. The name Cham Kul refers to the Cambodian Cham in South Vietnam and Cambodia. Cham Jarai refers to the Jarai, Cham Raglai to the Roglai, the name being interpreted as ra (orang) '*people*' and glai '*forest*', giving '*forest people or savages*' for Roglai. The name Cham Ro is interpreted as '*remnant Cham*' from ro '*remnant*'. This is probably the name which refers to the Haroi though the Cham have no knowledge about their location.

The Haroi themselves, even the elders, have no notion about any former connection with the Cham or the meaning of their own name. They have

lived in approximately the same mountain area as far as their memory goes. It is interesting, though, that they refer to themselves as *manih cham* '*Chamic people*'.

Culturally the Haroi are very similar to their close neighbours, the Rade, and the Jarai and quite different from the Cham (clothes, house style, carrying, and religion). But the Haroi language has many similarities with both Cham and the Northern Chamic languages.

2. CLAUSE CHARACTERISTICS

A Haroi clause characteristically describes one action or state. The slots in a clause are generally filled by words or phrases, and a clause, in turn, generally fills a slot in a sentence.

The clause types are differentiated by: 1) the different fillers which manifest the Predicate Tagmeme and 2) the number and kind of nuclear tagmemes that can occur. Action and Description Clauses are distinguished from each other by their having, respectively, an Action Predicate and a Description Predicate. Action Clauses include single action clauses and reciprocal action clauses. In Haroi causative actions have the same form as single action clauses, except for the causative verbs manifesting the Predicate, so they are included in the single action clauses.

3. NUCLEAR TAGMEMES

The six main nuclear tagmemes in Haroi clauses are: Subject (S), Predicate (P), Object (O), Referent (Ref), Origin (Ori), and Destination (Dest). The Predicate is obligatory in each clause type. In this paper I only describe independent clauses of Haroi, so the Subject is here being treated as also obligatory. All other nuclear tagmemes are optional if deducible from either linguistic or situational context.

As many as five nuclear tagmemes may be found in an Action Clause but usually a Haroi clause contains only Subject and Predicate plus one other tagmeme. If a Referent and a Destination, or a Referent and an Origin, are both present in a clause, then an Object must also be present. All other combinations are freely possible, while maintaining their normal order.

In the Description Clauses the nuclear tagmemes are usually obligatory; exceptions will be discussed under each type.

The nuclear tagmemes follow the general order: S - P - O - Ori - Ref - Dest. The Object can also precede the Subject. If it is emphasised it follows the Referent with no other tagmeme following behind. The Object

may also be divided, the more general part preceding the Referent, the more specific, emphasised part following it (see 3.3.). If Destination is absent Origin may move to the Destination position, unless there is a Location tagmeme present in which case Origin remains in its usual position. In simple Directional Clauses Origin can precede the Predicate. If the Origin of an Object is emphasised, Origin occurs following the Object in sentence-final position.

3.1. SUBJECT

The Subject can be manifested by a name, a pronoun, a noun phrase, or a compound noun phrase.

M-Lùi nàu pə Sən-Hòa.

M-Lùi goes to Sən-Hòa.

Kau nàu pə Sən-Hòa.

I go to Sən-Hòa.

Thua arang kamoi nàu pə Sən-Hòa.

Two(classifier)girls go to Sən-Hòa.

Ayong ho kau nàu pə Sən-Hòa.

Older-brother and I go to Sən-Hòa.

3.2. PREDICATE

Each clause type has a different class of verbs or verb phrases as fillers of the Predicate; so the filler classes will be discussed under each clause type. The verb phrase may contain an attitude tagmeme (e.g. *want, dare*) and/or a verification tagmeme (*not, not yet*).

Kau ǎəng nàu pə Sən-Hòa.

I want (to) go to Sən-Hòa.

Kau soh nàu pə Sən-Hòa.

I not go to Sən-Hòa.

Kau soh ǎəng nàu pə Sən-Hòa.

I not want (to) go to Sən-Hòa.

3.3. OBJECT

The Object occurs in Transitive (4.2.), Transitive-Referential (4.5.), Transitive-Directional (4.6.), and Transitive-Referential-Directional (4.7.) Clauses. It can be manifested by a name, a pronoun, a noun phrase, a compound noun phrase, or a clause.

Kau boh M-Lùi.

I see M-Lùi.

Kau boh bing.

I see them.

Kau boh thua trii manu?

I see two (classif.) chicken.

Kau boh ayong ho ča?ai.

I see older-brother and older-sister.

Kau boh ča?ai dī? se.

I see (that) older-sister gets-in car.

Kau čana? thua khu? lasoi kə tōai.

I cook two pots (of) rice for guest.

Divided Object (see 3.):

Kau čana? lasoi kə tōai thua khu?

I cook rice for guest two pots.

Emphasised Object (see 3.):

Kau čana? kə tōai lasoi.

I cook for guest rice.

3.4. REFERENT

The Referent Tagmeme occurs in Referential (4.3.), Transitive-Referential (4.5.), and Transitive-Referential-Directional (4.7.) Clauses. It is manifested by a prepositional phrase consisting of the preposition *kə* 'to, of (dative)' and a name, a pronoun, a noun phrase, a compound noun phrase, or a clause.

Kau haning kə M-Lùi.

I think of M-Lùi.

Kau haning kə ami? kau ho ayong kau.

I think of mother my and older-brother my.

Kau wòl kə ča?ai kau čèang nàu pə Sən-Hòa.

I forgot (that) older-sister my wanted (to) go to Sən-Hòa.

3.5. ORIGIN

The Origin Tagmeme occurs in the Directional (4.4.), the Transitive-Directional (4.6.), and the Transitive-Referential-Directional (4.7.) Clauses. It is manifested by a prepositional phrase consisting of the

preposition *m̃ng* 'from' and a name, a pronoun, a noun phrase, or a local word. Haroi local words include *ni* 'here', *nən* 'there', *thih* 'over-there', *yò?* 'below', and *ngo?* 'above'.

Kau rai *m̃ng Sən-Hòa*.

I came from Sən-Hòa.

Kau *m̃ng bing kal̃ai?* pə sàng.

I from them came-home to house.

Kau *m̃ng sàng thih rai tì?* ni.

I from house that came (to) here.

Kau *m̃ng thih rai tì?* ni.

I from over-there came (to) here.

Prò? *m̃ng hamia* kau *phia kal̃ai?* pə sàng.

Squirrel from field I brought back to house.

3.6. DESTINATION

The Destination Tagmeme occurs in the Directional (4.4.), the Transitive-Directional (4.6.), and the Transitive-Referential-Directional (4.7.) Clauses. It is manifested by a prepositional phrase consisting of a directional preposition, e.g. *pə* 'to', *l̃im* 'into', *ni?* 'up on, onto', *ho* 'up on, onto', and *ròk* 'along', plus a name, a pronoun, a noun phrase, a compound noun phrase, or a locative word (see 3.5.).

Kau nàu *pə Sən-Hòa*.

I go to Sən-Hòa.

Kau le? *l̃im êa*.

I fell into water.

Kau nàu *ròk ǎl̃an*.

I go along street.

4. ACTION CLAUSES

4.1. INTRANSITIVE CLAUSE

The Intransitive Clause has two nuclear tagmemes: Subject and Predicate.

Intransitive Clause: S P

Kau dih.

I sleep.

Lon tlih.

Ground caves-in.

The Predicate is manifested by intransitive verbs, including *dih* 'sleep', *tlɪh* 'cave in', *ha* 'open wide', *čakhù?* 'get up', *čadàng* 'crack', *thù?* 'live, stay', *asʔan* 'rain', *lapoi* 'dream', and *pôai?* 'talk'.

4.2. TRANSITIVE CLAUSE

The Transitive Clause has three nuclear tagmemes: Subject, Predicate, and Object.

Transitive Clause: S P O

Ča?ai bing lasoi.

Older-sister eats rice.

Kau čèam manu?.

I feed chicken.

The Predicate is manifested by transitive verbs, including *bing* 'eat', *čèam* 'feed (animals)', *boh* 'see', *thau* 'know', *tlɪang* 'look at', *athuah* 'seek', *hmək* 'hear', *pang* 'listen', *?yu* 'call', *čaña* 'ask', *ràu* 'wake (somebody) up', *kasuh* 'break (something)', *nga?* 'make', *aka?* 'measure', *yua?* 'harvest (rice)', *sò?* 'pound', *hmau* 'have', *čam* 'beat', *tlɪam* 'gore', *ke?* 'bite', and *plɪah* 'split'. Haroi transitive verbs with a causative meaning include *pa?yai* 'kill (cause to be dead)', *pahwəi?* 'frighten', and *palaphuh* 'knock down'. Haroi transitive verbs which take only clauses as Objects include *mapɪh* 'let, allow', and *padàl* 'command'.

Kau pahwəi? ča?ai kau.

I frighten older-sister my.

Ča?ai padàl kau nàu pə Sən-Hòa.

Older-sister command I go to Sən-Hòa.

(My sister told me to go to Sən-Hòa.)

4.3. REFERENTIAL CLAUSE

The Referential Clause contains three nuclear tagmemes: Subject, Predicate, and Referent.

Referential Clause: S P Ref

Kau hwəi? kə oi lamùng.

I fear (grandfather) tiger.

Kau pasiàng kə ayong kau.

I depend on older-brother my.

The Predicate is manifested by referential verbs, including *hwəi?* 'fear', *pasiàng* 'depend on', *haning* 'think of, remember', *wòl* 'forget',

čëang 'want', lài? 'talk about somebody', tliàu 'insult', hèi 'be angry, mad', thau 'know (somebody)', palamù? 'hate', pa?areh 'hate', pa?ung 'love', pàp 'pity', and ka?òu? 'be sad'.

4.4. DIRECTIONAL CLAUSE

The Directional Clause has four nuclear tagmemes: Subject, Origin, Predicate, and Destination.

Directional Clause: S Ori P Dest
(Ori)

Kau ming Sən-Hòa rai tì? ni.
I from Sən-Hòa came (to) here.

Kau rai ming Sən-Hòa.
I came from Sən-Hòa.

Kau nàu pə Sən-Hòa.
I go to Sən-Hòa.

The Predicate can be manifested by a directional verb, a motion verb, or a directional motion verb phrase. If there is an Origin present in the clause, the motion verb cannot occur by itself; it then has to be expanded into a directional motion verb phrase.

Haroi directional verbs include nàu 'go away', kalìai? 'go home', wih 'go back, turn around', rai 'come', tol 'arrive', dì? 'go upwards', trôn 'go downwards', čama 'go in', čaphia? 'go out', and tòi 'follow'. Of these verbs only tòi cannot occur without a preceding motion verb, and it is also optionally followed by an Object.

Kau kalìai? pə sàng kau.
I go-home to house my.

Kau dì? pə čə?
I climb up mountain.

Kau nàu tòi ča?ai.
I go following older-sister.

The directional motion verb phrase consists of a motion verb followed by a directional verb, the directional verb modifying the motion verb. Haroi motion verbs include dôai? 'run', tlot 'jump, hop (bird), bounce (car)', asôt 'walk (buffalo, cow, horse)', pòl 'fly', iùai 'swim', rùi 'crawl, walk (turtle)', kalung 'roll', le? 'fall', kaluh 'stream together', and hwe 'turn aside'.

Kau dôai? wih pə sàng.
I run back to house.

Kau dôi? čama lîm sàng.
I run entering into house.

Kau tlot trôn mîng sàng.
I jump down from house.

4.5. TRANSITIVE-REFERENTIAL CLAUSE

The Transitive-Referential Clause has four nuclear tagmemes: Subject, Predicate, Referent, and Object.

Transitive-Referential Clause: C P O Ref

Kau paplîi thua trîi manu? kê ayong.
I sell two (classif.) chicken to brother.

Kau čana? lasoi kê tòi.
I cook rice for guest.

The Predicate is manifested by transitive-referential verbs, including plîi 'buy', prîi 'give', atô? 'cook', čana? 'cook', mapîh 'keep something for somebody', nga? 'make', čačoi 'show', čêh 'write', akhàn 'tell (story)', dò? 'ask (riddle)', pato 'teach', and panah 'shoot'. Haroi transitive-referential verbs with causative meaning include paplîi 'sell (cause to buy)', and pačëam 'feed (child)'.

4.6. TRANSITIVE-DIRECTIONAL CLAUSE

The Transitive-Directional Clause has five nuclear tagmemes: Subject, Origin, Predicate, Object, and Destination.

Transitive-Directional Clause: S Ori P O Dest

Kau ma? čaphia? pathîai.
I take out rice.

Kau lûi pathîai lîm phung.
I put rice into basket.

Kau aphî? patau ho papung sàng.
I throw stone onto roof (of) house.

The Predicate is manifested by a directional-transitive verb phrase consisting of a transitive-motion verb optionally followed by a directional verb (4.4.), the directional verb modifying the transitive-motion verb. The directional verb can either directly follow the transitive-motion verb or occur after the Object. Haroi transitive-motion verbs include ma? 'take', lûi 'put', aphî? 'throw (stone)', čahrà? 'throw (spear)', čaro 'reach into', čalə? 'push', thùl 'pull', and kwai? 'get out handfulls'. Haroi transitive-motion verbs with a causative meaning

include *pale?* 'drop something', *pakalung* 'roll something', and *padôai?* 'take away'.

Kau čalə? nàu bằg.

I push away table.

Kau čalə? bằg nàu.

I push table away.

Kau aphì? patau dỉ? ho papung sằg.

I throw stone upwards onto roof (of) house.

4.7. TRANSITIVE-REFERENTIAL-DIRECTIONAL CLAUSE

The Transitive-Referential-Directional Clause has six possible nuclear tagmemes: Subject, Predicate, Object, Origin, Destination, and Referent. On the maximum number of tagmemes and restrictions in their co-occurrence see section 3.

Transitive-Referential-Directional Clause:

(O)	(Ori)	S	P	O	Ori	Dest	Ref
							(Ref)

Kau čatôh prỉah kə ča?ai lỉm phung.

I pour rice for older-sister into basket.

Prỉah kau čatôh mỉng phung ča?ai lỉm phung kau.

Rice I pour from basket older-sister into basket my.

Ńau phỉa kalỉai? prò? mỉng hamỉa pə sằg.

He brings home squirrel from field to house.

The Predicate is manifested by transitive-referential-directional verbs, including *phỉa* 'bring, take', *khui* 'carry in back-basket', *čatôh* 'pour', and *?yà?* 'carry in hand'.

4.8. SIMPLE RECIPROCAL CLAUSE

All Reciprocal Clause types have two sub-types: combined and differentiated. In a Combined Reciprocal Clause the two actors are grouped together as a plural Subject. In a Differentiated Reciprocal Clause the actors are stated separately. The differentiated type is less commonly used.

The Combined Simple Reciprocal Clause has two nuclear tagmemes: Combined Participant (Comb-Part), and Predicate. In the Differentiated Simple Reciprocal Clause the Participants fill separate slots: Participant (Part) and Associative-Participant (Assoc-Part). In both types the nuclear tagmemes are obligatory.

Simple Reciprocal Clause:

Combined: Comb-Part P

Thua tr̃i kaph̃au palatliam.

Two (classif.) buffalos gore-each-other.

Thua arang lakoi palačam.

Two (classif.) boys beat-each-other.

Differentiated: Part P Assoc-Part

Kaph̃au ni palatliam ho kaph̃au nən.

Buffalo this gore-each-other with buffalo that.

Ayong palačam ho ath̃i.

Older-brother beat-each-other with younger-sibling.

The Predicate of both Simple Reciprocal Clause types is manifested by simple reciprocal verbs. Haroi simple reciprocal verbs are mostly derived from transitive verbs which normally take an animate Object or from referential verbs. They include palačam 'beat each other', palatliam 'gore each other', palake? 'bite each other', palačoh 'peck each other', palatlau? 'poke each other', palatop 'sock each other back-handed', palačaria? 'jab each other', palapah 'slap each other', palapòh 'beat each other lightly with objects', palakanua 'beat each other forcefully with sticks', palatl̃au 'insult each other', palapl̃ah 'fight each other', phiasian 'beat each other with stones', phiamalu 'quarrel', phiamasòh 'tease each other', phiapa?ung 'love each other', and phiahèl 'be mad at each other'.

The Combined Participant can be manifested by a plural pronoun, a noun phrase with a plural head, or a compound noun phrase.

M-L̃ui ho M-Čòng phiamasòh.

M-L̃ui and M-Čòng tease-each-other.

The Participant is manifested by the same filler class as the Subject (see 3.), though a plural Subject is very rare in this type.

M-L̃ui ho M-Čòng phiamasòh ho ath̃i ñau.

M-L̃ui and M-Čòng tease-each-other with younger-sibling theirs.

The Associative-Participant is manifested by a prepositional phrase of the same kind as that which manifests the Associate Tagmeme (see 6.1.), the preposition ho 'with' is also obligatory, but the head can only be manifested by a name, a singular pronoun, or a noun phrase with a singular noun as head.

Ñau phiamasòh ho ath̃i ñau.

She tease-each-other with younger-sibling hers.

4.9. TRANSITIVE RECIPROCAL CLAUSE

There may be combined or differentiated participants (see 4.8.).

The Combined Transitive Reciprocal Clause has three nuclear tagmemes: Combined Participant, Predicate, and Reciprocal Object (Rec-O). In the differentiated type the participants fill separate slots: Participant and Associative-Participant. The Reciprocal Object is optional, the other nuclear tagmemes are obligatory in both types.

Transitive Reciprocal Clause:

Combined: Comb-Part P Rec-O

Thua arang kamoi phia?apan bù?.

Two (classif.) girls pull-each-other's hair.

Thua ata phiatliang mata.

Two we (incl.) look-at-each-other's eyes.

Differentiated: Part P Rec-O Assoc-Part

Ñau phia?apan bù? ho ča?ai ñau.

She pull-each-other's hair with older-sister her.

Ñau palatliang mata ho athi ñau.

She look-at-each-other's eyes with younger-sibling her.

The Predicate of both Transitive Reciprocal Clause types is manifested by a transitive reciprocal verb. Haroi transitive reciprocal verbs are mostly derived from transitive verbs that normally take an inanimate Object, and they include phia?apan 'pull at each other', phiatliang 'look at each other', phiakačàu 'grab each other', phiakaphi?ai? 'scratch each other', phiathùi 'tug at a rope', palañik 'tear from two sides', palamia? 'tuge at an object', palasôa 'tug at an object', and palakhò? 'bump together (e.g. with elbows)'.

The Participants are as in the Simple Reciprocal Clause (see 4.8.).

The Reciprocal Object may be manifested by noun phrases, but mostly only by a single noun.

Thua athi ayong palasôa bàng prong.

Two younger-sibling (and) older-brother tug-at table large.

5. DESCRIPTION CLAUSES

5.1. COMPLEMENT CLAUSES

The Complement Clause has three nuclear tagmemes: Subject, Nominal Complement (Nom-Com), and Adjectival Complement (Aj-Com). The Complement Clause must contain at least a Subject and one Complement.

Complement Clause: (Aj-Com) S Aj-Com Nom-Com (Aj-Com)

Ayong kau patruang.

Older-brother my (is) rich.

Phung nu aphih.

Basket this (is) finished.

Arang ni ca?ai, arang nen athi.

Person this (is) older-sister, person that (is) younger-sibling.

Path'ai kau ho phung.

Rice my (is) one basket.

Usually the Adjectival Complement comes after the Subject and is followed by the Nominal Complement. For emphasis, or if a peripheral tagmeme is present, the Adjectival Complement may precede the Subject or follow the Nominal Complement.

Path'ai kau aphih ho phung.

Rice my (is) finished (is) one basket.

Path'ai kau ho phung aphih ploh.

Rice my (is) one basket (is) finished already.

Aphih path'ai kau ho phung!

Finished (is) rice my (is) one basket!

The Nominal Complement is manifested by a noun phrase.

The Adjectival Complement is manifested by an adjective phrase.

Ayong kau patruang hlam dai.

Older-brother my (is) rich very much.

Patruang hlam dai ayong kau thôn ni!

Rich very much (is) older-brother my this year!

5.2. SIMPLE COMPARISON CLAUSE

All Comparison Clause types have two sub-types: combined and differentiated. In a Combined Comparison Clause the two participants are grouped together as a plural Subject. In a Differentiated Comparison Clause the participants are stated separately. The differentiated type is less frequently used.

The Combined Simple Comparison Clause has two nuclear tagmemes: Combined Subject (Comb-S), and Predicate. In the Differentiated Simple Comparison Clause the participants fill separate slots: Comparison Subject (Comp-S), and Comparison Associate (Comp-Ass). In both types the nuclear tagmemes are obligatory.

Simple Comparison Clause:

Combined: Comb-S P

Thua athi ayong makahnàl.

Two younger-sibling (and) older-brother are-equal.

Thua phôn kayau maladèl.

Two (class.) trees are-equally-thick.

Differentiated: Comp-S P Comp-Ass

Nau makahnàl ho ayong ñau.

He is-equal with older-brother his.

Manu? kau malathum ho manu? ayong.

Chicken my (are) as-many as chicken (of) older-brother.

The Predicate of both Simple Comparison Clause types is manifested by simple comparison verbs, including makahnàl 'be of equal status', maladèl 'be of equal thickness', mahamô 'be of equal length', malathi? 'be of equal length', malaning 'be of equal length', malathum 'be equal in number'.

The Combined Subject is manifested by the same filler class as the Combined Participant in the Combined Reciprocal Clause (see 4.8.).

The Comparison Subject is manifested by the same filler class as the Participant of the Differentiated Simple Reciprocal Clause (see 4.8.).

The Comparison Associate is manifested by the same filler class as the Associative Participant of the Differentiated Simple Reciprocal Clause (see 4.8.).

5.3. REFERENTIAL COMPARISON CLAUSE

There may be combined or differentiated participants (see 5.2.).

The Combined Referential Comparison Clause has three nuclear tagmemes: Combined Subject, Predicate, and Reciprocal Referent (Rec-Ref). In the differentiated type the participants fill separate slots: Comparison Subject, and Comparison Referent (Comp-Ref). The Subject and the Comparison Referent have to correspond in number; they are usually singular. The nuclear tagmemes of both types are obligatory.

Referential Comparison Clause:

Combined: Comb-S P Rec-Ref

Ata in kə kañiau.

We (incl.) resemble (to) each-other.

Thua athi ča?ai alih kañiau.

Two younger-sibling (and) older-sister resemble each-other.

Differentiated: Comp-S P Comp-Ref

Ñau alih kə ča?ai ñau.

She resembles (to) older-sister her.

Ñau he? ča?ai ñau.

She resembles older-sister her.

The Predicate is manifested by referential comparison verbs, including in 'resemble', alih 'resemble', and he? 'resemble'.

The Subjects are as in the Simple Comparison Clause (see 5.2.).

The Reciprocal Referent is a prepositional phrase, the preposition kə 'to' is optional, the head is filled by kañiau 'each other'.

Thua athi ča?ai he? (kə) kaniau.

Two younger-sibling (and) older-sister resemble (to) each-other.

The Comparison Referent is a prepositional noun phrase of the same kind as the Referent, the preposition kə 'to' is optional.

6. CLAUSE PERIPHERY

The Clause Periphery consists of those tagmemes on the clause level that can be added to clause nuclei: Associate (Ass), Beneficiary (Ben), Time (T), Location (Loc), Manner (Man), and Order (Ord). Reason is always expressed as a dependent clause, it is not a tagmeme within a clause.

Regarding the clause periphery the earlier statement about Action Clauses (see 3.) still holds true: usually a Haroi clause contains only Subject and Predicate plus one other tagmeme. It is possible to add more, though, under the following restrictions: If a clause has one nuclear tagmeme besides Subject and Predicate, normally only up to two peripheral tagmemes may be added. If the clause contains two nuclear tagmemes besides Subject and Predicate, only one peripheral tagmeme may be added.

The Description Clause can only take a maximum of four tagmemes. It does not take a Beneficiary or an Associate Tagmeme. The Manner and Order Tagmeme can not occur in the Comparison Clause, but they are rare possibilities in the Complement Clause. In both Description Clause types Time and Location may be found in rare instances.

The tagmemes in a clause follow the general order (nuclear tagmemes underlined):

<u>T₁</u>	<u>T₂</u>	<u>S</u>	<u>P</u>	<u>O</u>	<u>Ori</u>	<u>Ref</u>	<u>Dest</u>	<u>Ass</u>	<u>Man</u>	<u>Ord</u>
						Ben	Loc			

There can be a Time₁ or an emphasised Location Tagmeme in front of the Subject, if there is no Object or emphasised Origin preceding the Subject. Time₂ usually follows directly after Time₁, otherwise at the end of the clause in place of the Order Tagmeme. The Location Tagmeme usually occurs in the position of Destination. The Beneficiary can occur only in sentences that do not have a Referent or an Associate Tagmeme. It takes the place of the Referent. The Associate can not co-occur with the Referent. Usually it follows the Destination, but it can also take the place of the Referent. The Manner Tagmeme usually follows the Associate, but it can also occur between Origin and Predicate, or in the Referent position. The Order Tagmeme can only occur at the end of the clause.

6.1. ASSOCIATE TAGMEMES

The Associate is manifested by a prepositional phrase consisting of the connecting particle *ho 'with, and'* and a name, a pronoun, or a noun phrase. The Associate Tagmeme is also used to express an instrument.

Kau nàu pə Sən-Hòa ho M-Lùi.

I go to Sən-Hòa with M-Lùi.

Ayong čam ñau ho kayau.

Older-brother beat him with wood.

The Associate Tagmeme is not very frequent in Haroi clauses. More often it is combined with the Subject which then becomes a compound noun phrase. This is always done when there is a Referent or a Beneficiary Tagmeme in the clause, with which an Associate Tagmeme can not co-occur.

Kau ho ča?ai kau nàu pə Sən-Hòa.

I and older-sister my go to Sən-Hòa.

Kau ho ča?ai kau pl+i pače kə M-Lùi.

I and older-sister my buy material for M-Lùi.

6.2. BENEFICIARY TAGMEME

The Beneficiary is manifested by a prepositional phrase. I can be introduced by *pr+i kə 'for (lit. give to)'* or *kə 'to'*; *kə* is the same preposition that is used with the Referent. The head of the Beneficiary prepositional phrase is manifested by a name, a pronoun, or a noun phrase.

Kau nàu pr+i kə ča?ai kau pə Sən-Hòa.

I go for older-sister my to Sən-Hòa.

Kau čəam manu? kə ča?ai.

I feed chicken for older-sister.

6.3. TIME TAGMEME

Time₁ and Time₂ can both be manifested by a temporal phrase, Time₂ being more specific if they both co-occur. Time₁ can also be manifested by a temporal word, in that case only one Time Tagmeme can occur in a clause. Haroi temporal words include *bea?* 'in a short while', and *habang* 'all of a sudden'.

Pakhl ming-əm kau nàu pə Sən-Hòa.

Tomorrow morning I go to Sən-Hòa.

Pakhl kau nàu pə Sən-Hòa ming-əm.

Tomorrow I go to Sən-Hòa (in the) morning.

Bea? kau kal?ai?.

In-a-short-while I go-home.

Thua pal?an thing kau nàu pə Sən-Hòa.

(In) two months more I go to Sən-Hòa.

Time duration is also expressed by the Time Tagmeme.

Thua pal?an kau thù? pə Sən-Hòa.

Two months I lived in Sən-Hòa.

6.4. LOCATION TAGMEME

The Location Tagmeme is manifested by a preposition phrase with local prepositions like *pə* 'at, in (far distance)', *tì?* 'at, in (short distance)', *lìm* 'in, inside', *nì?* 'on', *khiah* 'on the side of', and a noun phrase or a local word (see 3. Origin).

Kau thù? tì? sàng nən.

I live in house that.

Kau athuah lìm sàng.

I search inside (the) house.

Location emphasis:

Pə Sən-Hòa soh hmau èa-časèi?!

In Sən-Hòa not has ocean!

(In Sən-Hòa there is no ocean!)

6.5. MANNER TAGMEME

The Manner Tagmeme is manifested by a manner phrase or an adverb. Haroi adverbs include atang 'fast (finished)', hamal 'fast (finished)', čariah 'fast (coming back)', kòang 'fast', sùi 'slowly', ming 'strongly', èm 'nicely', and sat 'badly'.

Kau nàu pə Sən-Hòa ho arang kau.

I go to Sən-Hòa one person I (i.e. alone).

Kau atang kalłai? pə sang.

I fast came-home to house.

Kau kalłai? pə sàng atang.

I came-home to house fast.

Kau kalłai? atang pə sàng.

I came-home fast to house.

6.6. ORDER TAGMEME

The Order Tagmeme is manifested by order words including hlau 'first', čathii 'later, last', thing 'more, again', kah 'first', and ploh 'already'.

Ča?ai bing hlau, athii bing čathii.

Older-sister ate first, younger-sibling ate later.

Kau nàu pə Sən-Hòa thing.

I go to Sən-Hòa again.

HAROI CLAUSES

NOTES

1. This analysis is based on material collected over a period of three and a half years, between July 1970 and March 1975 under the auspices of the Summer Institute of Linguistics. The final conclusions are based on the use of the language as spoken in the Sơn-Hòa area of Phú-Yên province.

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2. I am grateful to Mr Thiên-Sanh-Cảnh, for sharing with me information from old handwritten Cham documents. There are three kinds of materials: *dam nui* (biographies), *aria* (historical poems), and *tar* (history).

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